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CONTENTS

(Agaricales)
POLYPORACEAE 1
(PORIEAE) . . . . . .
Hydnoporia 3
Fuscoporia 3
Fuscoporella 6
Fomitiporia 7
Fomitiporella 12
Tinctoporia 14
Melanoporella 14
Melanoporia 14
(POLYPOREAE)
Irpiciporus 15
Poronidulus 16
Coriolus 16
Coriolellus 28
Spongiporus 29
Tomophagus 30
Tyromyces 30
Spongipellis 37
Bjerkandera 40
Trametes 42
Piptoporus 44
Earliella 44
Rigidoporus 45
Porodisculus 47
Hexagona 47
Microporellus 52
Polyporus 54
Abortiporus 64
Scutiger 64
Grifola 68
Aurantiporellus 70
Pycnoporellus 70
Pycnoporus 71
Aurantiporus 71
Flaviporellus 72
Laetiporus 72
Phaeolopsis 73
Cerrenella 73
Coriolopsis 74
Funalia 78
Trichaptum 79
Hapalopilus 80
Ischnoderma 82
Antrodia 82
Favolus 83
Flaviporus 84
(POLYPOREAE)
Pogonomyces 84
Nigroporus 85
Cycloporellus 85
Inonotus 86
Phaeolus 90
Coltriciella 91
Coltricia 91
(FOMITEAE)
Cryptoporus 94
Fomes 94
Fomitella 100
Pyropolyporus 101
Porodaedalea 111
Nigrofomes 112
Globifomes 112
Elfvingia 113
Amauroderma 115
Ganoderma 118
(DAEDALEAE)
Cerrena 124
Daedalea 124
Lenzites 127
Gloeophyllum 128
Cycloporus 131
BOLETACEAE 133
Gyroporus 133
Tylopilus 134
Ceriomyces 136
Suillellus 151
Rostkovites 153
Boletus 154
Boletellus 156
Pulveroboletus 156
Strobilomyces 157
Boletinellus 158
Boletinus 159
AGARICACEAE 163
CHANTERELEAE 163
Plicatura 163
Xerotinus 165
Dictyolus 165
Asterophora 166
Trogia 166
Chanterel 167
Polyozellus 171
Plicaturella 172
Chlorophyllum 172

LACTARIEAE 172
Lactaria 172
Russula 201
AGARICEAE 237
Schizophyllus 237
Pleurotopsis 238
Scytinotus 239
Resupinatus 240
Marasmiellus 243
Panellus 244
Tectella 247
Heliomyces 247
Marasmius 250
Polymarasmius 286
Crinipellis 287
Lentinus 288
Lentinula 295
Lentinellus 295
Lentodium 296
Lentodiellum 297
Geopetalum 298
(AGARICEAE)
Crepidopus 304
Micromphale 307
Leptomyces 309
Omphalopsis 310
Galactopus 318
Prunulus 319
Omphalina 344
Gymnopus 352
Hydrocybe 376
Camarophyllus 385
Hygrophorus 390
Clitocybe 396
CORRECTIONS 423
BIBLIOGRAPHY 427
INDEXES 461
Index to families and tribes 461
Index to recognized genera and species 461
Index to species 472
General index 513

Family 5. **POLYPORACEAE**

By William Alphonso Murrill

Hymenophore annual or perennial : context fleshy-tough, corky, or woody ; hymenium poroid or lamelloid, fleshy to woody, never gelatinous.

Hymenophore entirely resupinate, never reflexed. — Tribe 1. Porieae.
Hymenophore normally pileate, often effused-reflexed, sometimes varying to resupinate.
  Hymenium porose.
    Hymenophore annual.[1] — Tribe 2. Polyporeae.
    Hymenophore perennial.[2] — Tribe 3. Fomiteae.
  Hymenium furrowed.[3] — Tribe 4. Daedaleae.

Tribe 1. Porieae. Hymenophore entirely resupinate, fleshy-tough to corky, annual or perennial : context fibrous to punky, usually very thin, variously colored ; tubes usually cylindrical, sometimes irpiciform and rarely somewhat daedaleoid : spores brown or hyaline; cystidia often present.

Hymenophore white or bright-colored. (See Volume 8 ; not yet published.)
Hymenophore brown.
  Hymenophore annual ; tubes not stratified.
    Hymenium irpiciform. — 13. Hydnoporia.
    Hymenium normally poroid.
      Spores hyaline. — 14. Fuscoporia.
      Spores brown. — 15. Fuscoporella.
  Hymenophore perennial ; tubes stratified.
    Spores hyaline. — 16. Fomitiporia.
    Spores brown. — 17. Fomitiporella.
Hymenophore black.
  Hymenophore annual.
    Spores hyaline. — 18. Tinctoporia.
    Spores brown. — 19. Melanoporella.
  Hymenophore perennial. — 20. Melanoporia.

Tribe 2. Polyporeae. Hymenophore variable in size and shape, fleshy-tough to corky, annual, sometimes reviving and rarely perennial, especially in the tropics ; surface encrusted or anoderm, glabrous or hairy, zonate or azonate: context fibrous, rarely punky, variously colored ; tubes cylindrical, sometimes splitting into teeth, usually thin-walled : spores rounded or oblong, brown or hyaline ; cystidia frequently present ; surface of pileus never conidium-bearing : stipe often present, variously attached.

Context white.
  Hymenophore sessile.
    Tubes hexagonal, arranged in radiating rows ; context thin. — 35. Hexagona.
    Tubes alveolar ; context thin, dry ; surface zonate. — 55. Favolus.
    Tubes mostly shallow, marginal and obsolete; hymenium hydnoid or irpiciform at a very early stage. — 21. Irpiciporus.
    Tubes normally poroid, sometimes irpiciform from the rupture of the dissepiments at maturity.
      Hymenium at length separating smoothly from the context. — 31. Piptoporus.
      Hymenium not separating as above.
        Pileus very soft, spongy and elastic throughout.
          Hymenophore small ; tubes large, not fragile. — 25. Spongiporus.
          Hymenophore of immense size ; tubes small, fragile when dry. — 26. Tomophagus.
        Pileus more or less firm, flexible or rigid.
          Context duplex, spongy above, firm below ; surface sodden and bibulous. — 28. Spongipellis.
          Context not duplex as above.
            Pileus fleshy-tough to woody and rigid.
              Surface anoderm, rarely zonate.
                Hymenium more or less smoke-colored at maturity. — 29. Bjerkandera.
                Hymenium white or pallid.
                  Context fleshy to fleshy-tough, friable when dry. — 27. Tyromyces.
                  Context punky to corky, not friable when dry. — 30. Trametes.

[1] Apparent or real exceptions occur at times in *Earliella corrugata*, *Pycnoporus cinnabarinus*, *Coriolopsis subglabrescens*, *Hapalopilus gilvus*, and *Hapalopilus licnoides*.

[2] Exceptions occur in *Ganoderma* spp., *Amauroderma* spp., *Elfvingia lobata*, and *Fomitella supina*. *Porodaedalea* is closely allied to the Daedaleae.

[3] *Cerrena* shows an irpiciform hymenium at maturity, much resembling species of *Coriolus*. *Daedalea* and *Gloeophyllum* sometimes show poroid forms that are very confusing.

Surface pelliculose, often zonate; plants chiefly tropical.
Plants large, more than 5 cm. in diameter; hymenium flesh-colored. 32. EARLIELLA.
Plants small, 5 cm. or less in diameter; hymenium white or pallid. 33. RIGIDOPORUS.
Pileus thin, leathery and more or less flexible, surface usually zonate.
Hymenophore preceded by a cup-shaped sterile body. 22. PORONIDULUS.
Hymenophore not as above.
Hymenophore normally pileate; tubes small and nearly always regular. 23. CORIOLUS.
Hymenophore semi-resupinate; tubes large and irregular. 24. CORIOLELLUS.
Hymenophore stipitate.
Stipe compound. 40. GRIFOLA.
Stipe simple.
Plants fleshy, terrestrial. 39. SCUTIGER.
Plants tough, epixylous.
Tubes large, hexagonal and radially elongate from the first. 35. HEXAGONA.
Tubes not as above.
Pileus inverted, erumpent from lenticels. 34. PORODISCULUS.
Pileus erect or lateral, not erumpent.
Context duplex, spongy above, woody below. 38. ABORTIPORUS.
Context homogeneous, firm.
Surface zonate. 36. MICROPORELLUS.
Surface azonate. 37. POLYPORUS.
Context bright-colored; yellow or red.
Hymenophore sessile or subsessile.
Pores red.
Context soft and spongy. 41. AURANTIPORELLUS.
Context firm.
Tubes unchanged on drying.
Tubes fragile; surface anoderm. 42. PYCNOPORELLUS.
Tubes firm and regular; surface pelliculose. 43. PYCNOPORUS.
Tubes orange-colored, becoming dark and resinous on drying. 44. AURANTIPORUS.
Pores yellow.
Context thin; plants small. 45. FLAVIPORELLUS.
Context thick; plants very large. 46. LAETIPORUS.
Hymenophore distinctly stipitate; context yellow. 47. PHAEOLOPSIS.
Context brown.
Hymenophore sessile.
Spores hyaline.
Context light-brown.
Context at first fleshy, becoming slightly corky. 53. ISCHNODERMA.
Context tough from the first.
Surface encrusted. 54. ANTRODIA.
Surface not encrusted.
Surface glabrous or nearly so.
Hymenium alveolate. 55. FAVOLUS.
Hymenium normally poroid. 52. HAPALOPILUS.
Surface distinctly hairy.
Tubes small and regular. 49. CORIOLOPSIS.
Tubes large and irregular. 50. FUNALIA.
Context dark-brown.
Context duplex, mostly of intricately woven black hairs. 51. TRICHAPTUM.
Context simple.
Context friable. 61. PHAEOLUS.
Context tough.
Tubes yellow. 56. FLAVIPORUS.
Tubes brown, rarely greenish.
Tubes entire.
Surface heavily bearded. 57. POGONOMYCES.
Surface not bearded. 49. CORIOLOPSIS.
Tubes soon splitting into teeth. 48. CERRENELLA.
Tubes black. 58. NIGROPORUS.
Spores brown.
Hymenophore thin, dry, multizonate. 59. CYCLOPORELLUS.
Hymenophore not as above. 60. INONOTUS.
Hymenophore stipitate.
Spores hyaline. 61. PHAEOLUS.
Spores brown.
Pileus inverted, pendant. 62. COLTRICIELLA.
Pileus erect, stipe central. 63. COLTRICIA.

Tribe 3. FOMITEAE. Hymenophore large, woody, perennial, rarely small or annual; surface anoderm or encrusted, usually sulcate, sometimes varnished: context punky or woody, variously colored; tubes cylindrical, usually thick-walled: spores rounded, smooth or verrucose, hyaline or brown; cystidia frequently present: surface of pileus conidium-bearing in a few species: stipe rarely present, the hymenophore usually being sufficiently elevated by its host. Annual

forms and species in a few genera connect this group with the Polyporeae; while the tendency at times to produce a daedaleoid hymenium, shown especially in *Porodaedalea*, connects it with the Daedaleae.

Tubes at first concealed by a volva. 64. CRYPTOPORUS.
Tubes free from the first.
  Surface of hymenophore covered with reddish-brown varnish; context punky to corky. 73. GANODERMA.
  Surface of hymenophore not as above.
    Hymenophore distinctly stipitate. 72. AMAURODERMA.
    Hymenophore sessile or subsessile.
      Context white, flesh-colored or wood-colored. 65. FOMES.
      Context olivaceous. 66. FOMITELLA.
      Context brown, latericeous, dark-purple or black.
        Surface not encrusted; or, if so, context woody.
          Context brown or latericeous.
            Hymenium porose. 67. PYROPOLYPORUS.
            Hymenium porose-daedaleoid. 68. PORODAEDALEA.
          Context dark-purple or black. 69. NIGROFOMES.
        Surface encrusted; context punky.
          Hymenophore subsessile, cespitose. 70. GLOBIFOMES.
          Hymenophore sessile, simple or imbricate. 71. ELFVINGIA.

Tribe 4. DAEDALEAE. Hymenium annual, very rarely perennial, coriaceous to woody, variable in size; surface anoderm, hairy or glabrous, variously marked: context white or brown, fibrous, woody or punky; hymenium exceedingly variable, normally labyrinthiform or lamelloid, but often poroid or even irpiciform, never stratified: spores smooth, brown or hyaline. Poroid and irpiciform plants of this group are difficult to separate from certain species of Polyporeae; forms of *Daedalea confragosa* in particular being troublesome to the beginner. On the other hand, there is little to cause confusion between this group and the Fomiteae, if we except the single distinctly perennial species of *Daedalea* and the daedaleoid forms of *Porodaedalea*.

Context white or wood-colored.
  Hymenium labyrinthiform, often becoming lamellate or irpiciform.
    Hymenium very soon becoming irpiciform. 74. CERRENA.
    Hymenium rarely becoming irpiciform and then not until maturity. 75. DAEDALEA.
  Hymenium lamellate from the first, not becoming irpiciform. 76. LENZITES.
Context brown.
  Hymenophore sessile, furrows radiate. 77. GLOEOPHYLLUM.
  Hymenophore centrally stipitate, furrows concentric. 78. CYCLOPORUS.

13. **HYDNOPORIA** Murrill, gen. nov.

Hymenophore resupinate, epixylous, annual: context very thin, brown; hymenium soon becoming irpiciform or hydnoid, tubes brown, thin-walled: spores smooth, hyaline; hyphae brown; cystidia present.

Type species, *Sistotrema fuscescens* Schw.

1. **Hydnoporia fuscescens** (Schw.) Murrill.

Sistotrema fuscescens Schw. Schr. Nat. Ges. Leipzig 1: 102. 1822.
Irpex cinnamomeus Fries, Epicr. Myc. 524. 1838. (Type from North America.)

Broadly effused, inseparable, irregular, coriaceous, 1–2 mm. thick; margin thin, adnate, lobed, subbyssoid, sterile, ferruginous: context very thin, tough, ferruginous to fulvous; hymenium uneven, hydnoid, ferruginous to fulvous, at length umbrinous; tubes uneven, 0.5–2 mm. long, punctiform at the margin, but soon becoming irpiciform or hydnoid, teeth hollow, pruinose, nearly conical at first, becoming elongate, flattened and incised with age: spores smooth, hyaline; hyphae ferruginous, 2–4 μ; cystidia fairly abundant, long, cuspidate, tapering at both ends, fulvous, 50–80 $\times$ 10–15 μ.

TYPE LOCALITY: North Carolina.
HABITAT: Dead deciduous wood.
DISTRIBUTION: New York to Alabama and west to Wisconsin and Texas.
EXSICCATI: Rav. Fungi Car. 1: *27*; Rab.-Wint. Fungi Eur. *2935*; Shear, N. Y. Fungi *309*, Ellis, N. Am. Fungi *104*; Ellis & Ev. Fungi Columb. *305*.

14. **FUSCOPORIA** Murrill, gen. nov.

Hymenophore resupinate, epixylous, thin, effused, annual: context thin, brown; tubes not stratified, brown, short, usually regular, small and thin-walled: spores globose to ovoid, smooth, hyaline; cystidia nearly always present.

Type species, *Boletus ferruginosus* Schrad.

Tubes large, 2–3 to a mm., hexagonal or irregular, sometimes becoming daedaleoid.
  Mouths hexagonal; cystidia none. 1. *F. carbonaria*.
  Mouths irregular, often daedaleoid; cystidia abundant. 2. *F. viticola*.

Tubes small or medium, 4–8 to a mm.
  Species confined to temperate regions.
    Margin very broad, woolly-tomentose; cystidia none. 3. *F. subiculosa.*
    Margin not as above; cystidia present.
      Species confined to coniferous wood.
        Found only on *Juniperus.* 4. *F. juniperina.*
        Found only on *Abies.* 5. *F. marginella.*
      Species confined to deciduous wood.
        Spores obovate-oblong, 5 × 3 μ. 6. *F. ferruginosa.*
        Spores subglobose, 2 μ. 7. *F. fulvida.*
  Species confined to the tropics.
    Hymenophore 1 mm. thick. 8. *F. rufitincta.*
    Hymenophore 2.5–4 mm. thick. 9. *F. nicaraguensis.*

1. **Fuscoporia carbonaria** (Berk. & Curt.) Murrill.

Hexagonia carbonaria Berk. & Curt. Grevillea 1: 68. 1872.

Effused, more or less separable, orbicular to irregular, coriaceous, 1.5–2.5 mm. thick; margin elevated, sometimes obtuse, fertile, undulate or lobed, ferruginous to fulvous: context inconspicuous, fulvous; tubes fulvous within, their cavities whitish-pruinose, mouths large, hexagonal, grayish-fulvous, 2 to a mm., edges thin, entire: spores smooth, hyaline; hyphae pale-ferruginous, 2–3 μ; cystidia none.

TYPE LOCALITY: South Carolina.
HABITAT: On charcoal and burnt sticks in woods.
DISTRIBUTION: South Carolina and Florida.

2. **Fuscoporia viticola** (Schw.) Murrill.

Polyporus viticola Schw.; Fries, Elench. Fung. 115. 1828. — Trans. Am. Phil. Soc. II. 4: 158. 1832.

Effused, much elongated, inseparable, coriaceous, flexible to fragile, 1–2 mm. thick; margin determinate, thin, adnate, entire or lobed, ferruginous, finely tomentose, narrowly sterile, fertile with age: context conspicuous, fulvous, soft and pliable; hymenium plane or convex, ferruginous-fulvous to avellaneous or grayish-umbrinous, darker when bruised, irpiciforn in some specimens from the splitting of the dissepiments; tubes short, fulvous within, the cavities stuffed with grayish-white mycelium, mouths large and irregular, variable, often daedaleoid with age, averaging 2–3 to a mm., edges rather thick, firm, entire: spores globose, smooth, hyaline, 2.5–3.5 μ; hyphae ferruginous, 3 μ; cystidia long, slender, cuspidate, fulvous, abundant, 40–50 × 6–7 μ.

TYPE LOCALITY: Salem, North Carolina.
HABITAT: Various forms of dead deciduous wood.
DISTRIBUTION: New England to South Carolina and west to Missouri.
EXSICCATI: Rav. Fungi Car. 1: *16;* Thüm. Myc. Univ. *508;* Rab.-Wint. Fungi Eur. *3433;* Ellis, N. Am. Fungi *111;* Ellis & Ev. Fungi Columb. *207.*

3. **Fuscoporia subiculosa** (Peck) Murrill.

Polyporus subiculosus Peck, Ann. Rep. N. Y. State Mus. 31: 37. 1879.

Broadly effused, separable, irregular, very soft and flexible; margin very broad, sterile, woolly-tomentose, adnate or somewhat free, ferruginous, irregular: context conspicuous, 1–2 mm. thick, resembling the margin in all respects; hymenium thin, plane, slightly uneven, cinereous-ferruginous, brownish when bruised; tubes more or less oblique, 1–2.5 mm. long, pale-isabelline within, mouths irregular, punctiform to angular, often somewhat daedaleoid, 2–3 to a mm., edges rather thin, uneven, entire to coarsely toothed: spores subglobose, smooth, hyaline, 4–6 μ; hyphae ferruginous, 5–7 μ; cystidia none.

TYPE LOCALITY: Copake, New York.
HABITAT: Creeping over mosses, dead wood, and stones, in sheltered places.
DISTRIBUTION: Known only from the type locality.

4. **Fuscoporia juniperina** Murrill, sp. nov.

Effused, inseparable, oblong-elliptical to irregular, coriaceous to rigid, 1.5 mm. thick; margin thin, adnate, broadly sterile, ferruginous, irregular, nearly glabrous: context inconspicuous, ferruginous; hymenium slightly glistening, at length opaque, ferruginous to umbrinous, nearly plane, cracking with age; tubes pale-umbrinous within, mouths regular,

circular, minute, 7 to a mm., edges thick-walled, entire: spores globose, smooth, hyaline, copious, 5–6 μ; hyphae ferruginous-fulvous, 3–4 μ; cystidia fulvous, pointed, ventricose at the base, scanty, 15–25 μ.

Type collected at St. Martinsville, Louisiana, on the under side of decaying fallen trunks of *Juniperus virginiana*, December 3, 1888, *A. B. Langlois 1584*.

DISTRIBUTION: Known only from the type locality.

5. **Fuscoporia marginella** (Peck) Murrill.

Polyporus marginellus Peck, Ann. Rep. N. Y. State Mus. 42: 26. 1889.

Effused, inseparable, irregular, rigid, corky, 2–5 mm. thick; margin distinct, adnate, thin, undulate, finely tomentose, sterile, subcinnamon, becoming fulvous with age, the extreme growing margin said to be white when fresh: context conspicuous, ferruginous, rather soft, 0.5 mm. thick; hymenium ferruginous to dark-fulvous, often uneven; tubes oblique, 3 mm. long, whitish-stuffed and avellaneous within, mouths subcircular, 4 to a mm., edges obtuse, entire: spores ovoid, smooth, hyaline, 6 × 5 μ; hyphae ferruginous, 4 μ; cystidia very long and very slender, fulvous, abundant, 50–80 μ.

TYPE LOCALITY: North Elba, New York.
HABITAT: Dead bark and decorticated trunks of *Abies nigra*.
DISTRIBUTION: New York.

6. **Fuscoporia ferruginosa** (Schrad.) Murrill.

Boletus ferruginosus Schrad. Spic. Fl. Germ. 172. 1794.

Effused, inseparable, irregular, coriaceous to rigid, 1–3 mm. thick; margin thin, adnate, usually determinate, entire to undulate, tomentose, sterile, ferruginous: context conspicuous, ferruginous; hymenium plane or uneven, often oblique, sometimes imbricate-undulate, bright-ferruginous, becoming ferruginous-fuscous with age; tubes whitish-stuffed, ferruginous to fuscous within, mouths variable, irregular, subcircular, averaging about 4 to a mm., edges thin, more or less dentate: spores obovate-oblong, smooth, hyaline, 1-guttulate, 5 × 3 μ; hyphae flavous, 2–3 μ; cystidia fulvous, cuspidate, ventricose at the base, abundant, 35–45 × 6–8 μ.

TYPE LOCALITY: Germany.
HABITAT: Dead deciduous wood.
DISTRIBUTION: North America; also in Europe.

7. **Fuscoporia fulvida** (Ellis & Ev.) Murrill.

Mucronoporus fulvidus Ellis & Ev. Proc. Acad. Phila. 1894: 323. 1894.

Effused, inseparable, oblong-elliptical to irregular, rigid, 1–3 mm. thick; margin thin, adnate, irregular, sterile, tomentose, ferruginous, becoming umbrinous or brownish with age: context conspicuous, thin, fulvous; hymenium plane or slightly convex, usually even, ferruginous to fulvous, slightly grayish with age; tubes ferruginous within, partially whitish-stuffed, mouths regular, at first thick-walled, subcircular to angular, 4–5 to a mm., edges thin, uneven to slightly dentate or fimbriate with age: spores subglobose, smooth, hyaline, 2 μ; hyphae luteous; cystidia tolerably abundant, rather pale, 25–35 × 3–4 μ.

TYPE LOCALITY: Berkeley, California.
HABITAT: Dead limbs of alder.
DISTRIBUTION: Known only from the type locality.

8. **Fuscoporia rufitincta** (Cooke) Murrill.

Poria rufitincta Cooke, Grevillea 15: 25. 1886. — Jour. Linn. Soc. 35: 7. 1901.

Broadly effused, partly separable with age, coriaceous to rigid or slightly flexible, about 1 mm. thick; margin free, thin, narrowly sterile, lobed, nearly glabrous, ferruginous: context conspicuous, ferruginous, less than 0.5 mm. thick; hymenium uneven, rufous, suffused when young with a grayish-umbrinous pruinosity, assuming a slightly reddish tinge with age; tubes very short, less than 1 mm., ferruginous to slightly fulvous within, mouths minute, regular, circular, at first punctiform, 7 to a mm., edges rather thin, slightly

uneven, entire: spores subglobose, smooth, hyaline, 4–5 μ; hyphae ferruginous; cystidia long and slender, deep-fulvous, 60–80 $\times$ 8 μ.

TYPE LOCALITY: Cuba.
HABITAT: Dead wood.
DISTRIBUTION: West Indies.

9. **Fuscoporia nicaraguensis** Murrill, sp. nov.

Broadly effused, irregular, inseparable, coriaceous to rigid, 2.5–4 mm. thick; margin adnate, rather thick, more or less determinate, lobed, tomentose, ferruginous, narrowly sterile, becoming glabrous and purplish-brown with age: context conspicuous, ferruginous, 1 mm. or more thick; hymenium very smooth, umbrinous with a smoky tinge, ferruginous when very young; tubes umbrinous within, whitish-stuffed, 1–2 mm. long, mouths minute, regular, circular, 8–9 to a mm., edges thick, entire: spores globose, smooth, hyaline, 3 μ; hyphae bright-ferruginous; cystidia conical, pointed, ferruginous, ventricose when young, abundant, 25–35 $\times$ 4–8 μ.

Type collected at Castillo, Nicaragua, on decorticated deciduous trunks, in 1891–2, *Charles L. Smith.*

DISTRIBUTION: Known only from the type locality.

DOUBTFUL SPECIES

Boletus superficialis Schw. Schr. Nat. Ges. Leipzig 1: 99. 1822. Described from North Carolina specimens collected on dead *Prunus* sp. Possibly an immature form of *Polyporus viticola* Schw.

15. **FUSCOPORELLA** Murrill, gen. nov.

Hymenophore resupinate, epixylous, effused, annual: context thin, brown; tubes one-layered, brown, usually small and regular: spores globose to ovoid, smooth, brown; cystidia rarely present.

Type species, *Fuscoporella coruscans* Murrill.

Tubes large, 2–3 to a mm.; margin free. 1. *F. palmicola.*
Tubes small, 4–7 to a mm.; margin adnate.
  Cystidia abundant; species temperate. 2. *F. ludoviciana.*
  Cystidia none; species tropical.
    Hymenium chestnut-colored at maturity; spores 5–6 μ. 3. *F. costaricensis.*
    Hymenium ferruginous to dark-fulvous; spores 3–5 μ.
      Hymenium glistening and changing color to a marked degree, tubes very oblique; spores subglobose, 4–5 μ. 4. *F. coruscans.*
      Hymenium not as above.
        Mouths regular, edges obtuse. 5. *F. mexicana.*
        Mouths irregular, edges acute. 6. *F. Shaferi.*

1. **Fuscoporella palmicola** (Berk. & Curt.) Murrill.

Polyporus palmicola Berk. & Curt. Jour. Linn. Soc. Bot. 10: 317. 1868.

Effused, suborbicular, separable, thin, soft, coriaceous, flexible, 1–2 mm. thick; margin free, thin, broadly sterile, fimbriate, entire or lobed in outline, flavous-ferruginous, finely tomentose: context thin, conspicuous, concolorous with the margin; hymenium flavous-ferruginous, becoming nearly fulvous; tubes short, punctiform near the margin, about 1 mm. long at the center, fulvous within, mouths large, circular to somewhat irregular, averaging 2 to a mm., edges obtuse, entire: spores subglobose, smooth, ferruginous-fulvous, 3–4 μ; hyphae ferruginous, 3–4 μ; cystidia scanty, very long, slender, fulvous, 40–60 μ long, 6–7 μ thick at the base.

TYPE LOCALITY: Cuba.
HABITAT: Dead stipes of a prickly palm.
DISTRIBUTION: Known only from the type locality.

2. **Fuscoporella ludoviciana** Murrill, sp. nov.

Broadly effused, inseparable, irregular, rigid, woody, 1 mm. thick; margin thin, adnate, somewhat depressed, fertile, ferruginous, undulate or lobed: context inconspicuous, ferruginous to fulvous; hymenium plane, ferruginous to grayish-umbrinous; tubes cylindrical, very oblique, the layer about 1 mm. thick, umbrinous within, mouths 5 to a

mm., regular, edges thin, rigid, entire, uneven because of the oblique tubes: spores globose, smooth, ferruginous, copious, 4–5 μ; hyphae ferruginous, 4 μ; cystidia abundant, dark-fulvous, ventricose, pointed, 10–15 $\times$ 6 μ.

Type collected at St. Martinsville, Louisiana, on oak branches, March 11, 1889, *A. B. Langlois 1737*.

DISTRIBUTION: Known only from the type locality.

3. **Fuscoporella costaricensis** Murrill, sp. nov.

Orbicular to irregularly effused, inseparable, rigid, fragile, 1–2 mm. thick; margin thin, adnate, entire to undulate, narrowly sterile, ferruginous, nearly glabrous, becoming blackish at times with age: context inconspicuous, ferruginous to fulvous; hymenium nearly plane, ferruginous when very young, soon becoming umbrinous and finally chestnut-colored, cracking with age; tubes very short, 1–2 mm. long, umbrinous within, mouths punctiform, regular, subcircular, 5–6 to a mm., edges thin, rigid, entire: spores subglobose, smooth, ferruginous, 5–6 μ; hyphae pale-ferruginous, 3–4 μ; cystidia none.

Type collected at Santo Domingo de San Mateo, Costa Rica, 300 meters, on a decayed hardwood trunk, May 15–17, 1906, *W. R. Maxon 588*.

DISTRIBUTION: Known only from the type locality.

4. **Fuscoporella coruscans** Murrill, sp. nov.

Effused, rigid, annual, 2–4 $\times$ 5–8 $\times$ 0.1–0.3 cm.; margin thin, ferruginous, becoming blackish and at times somewhat thick and elevated: context very thin, ferruginous; hymenium smooth, glistening, changing from fulvous to avellaneous with the direction of the light, fissured on drying; tubes oblique, cylindrical, regular, rigid, rather thick-walled, entire or dentate, 0.1–0.3 mm. long, 6 to a mm., ferruginous within, slightly flesh-colored externally when seen under a lens: spores smooth, subglobose, pale-ferruginous, copious, 4–5 μ; hyphae pale-ferruginous; cystidia none.

Type collected at Alto Cedro, Cuba, on decayed hardwood logs in a dense virgin forest, March 20, 1905, *F. S. Earle & W. A. Murrill 473*.

DISTRIBUTION: Known only from the type locality.

5. **Fuscoporella mexicana** Murrill, sp. nov.

Irregularly effused, inseparable, coriaceous to rigid, 1 mm. thick; margin irregular, thin, adnate, narrowly sterile, ferruginous: context inconspicuous, ferruginous to fulvous; hymenium plane, ferruginous when young, fuliginous and cracking with age; tubes fulvous within, mouths regular, subcircular to angular, 5–6 to a mm., edges thick, entire: spores subglobose, smooth, ferruginous, copious, 3–4 μ; hyphae ferruginous; cystidia none.

Type collected in Mexico, on dead wood, in 1891, *Charles L. Smith*.

DISTRIBUTION: Known only from the type locality.

6. **Fuscoporella Shaferi** Murrill, sp. nov.

Broadly effused, seceding with age, irregular, corky to woody, rigid when dry, 1 mm. thick; margin undulate to irregular, thin, adnate, ferruginous, broadly sterile, reddish-brown with age: context conspicuous, ferruginous to fulvous; hymenium plane, even, grayish-umbrinous, ferruginous-tinted when young; tubes short, fulvous within, oblique, mouths irregular, very shallow, 6 to a mm., edges rather thin, uneven, sometimes dentate, with a tinge of flesh-color under a lens: spores subglobose, smooth, ferruginous, copious, 3–4 μ; hyphae ferruginous, 2–3 μ; cystidia none.

Type collected on Fergus Mountain, Montserrat, West Indies, on a decorticated trunk, January 30, 1907, *J. A. Shafer*.

DISTRIBUTION: Known only from the type locality.

16. **FOMITIPORIA** Murrill, gen. nov.

Hymenophore resupinate, epixylous, perennial, inseparable, rigid: context thin, brown; tubes brown, stratified, usually thick-walled and entire: spores globose to ellipsoidal, smooth, hyaline; hyphae usually brown; cystidia sometimes present.

Type species, *Fomitiporia Langloisii* Murrill.

Hymenophore very large, attaining a thickness of 3–4 cm.
  Hymenium pallid. 1. *F. tropicalis.*
  Hymenium umbrinous. 2. *F. dryophila.*
Hymenophore 1–2 cm. thick at maturity.
  Hymenium ashy-white when young, discolored with age. 3. *F. cubensis.*
  Hymenium some shade of brown.
    Tubes thick-walled, very oblique. 4. *F. obliquiformis.*
    Tubes thin-walled, perpendicular. 5. *F. Langloisii.*
Hymenophore less than 1 cm. thick at maturity.
  Hymenium not distinctly stratified.
    Tubes ferruginous within; species confined to *Tsuga*. 6. *F. tsugina.*
    Tubes fulvous within; species found on deciduous trees.
      Temperate species.
        Tubes whitish-stuffed; spores 4 μ; species confined to *Prunus*. 7. *F. prunicola.*
        Tubes yellowish-stuffed; spores 5–6 μ; species found on oak. 8. *F. Earleae.*
      Tropical species.
        Context ferruginous-fulvous. 9. *F. undulata.*
        Context dark-fulvous to latericeous. 10. *F. cinchonensis.*
  Hymenium distinctly stratified.
    Temperate species.
      Margin becoming tumid and blackish with age. 11. *F. pereffusa.*
      Margin not as above.
        Mouths of tubes angular, thin-walled. 12. *F. Lloydii.*
        Mouths of tubes subcircular, thick-walled.
          Hymenium very distinctly stratified in many layers, tubes whitish-stuffed. 13. *F. laminata.*
          Hymenium less distinctly stratified in 2–3 layers, tubes not whitish-stuffed. 14. *F. ohiensis.*
    Tropical species.
      Spores 3–4 μ; cystidia present. 15. *F. flavomarginata.*
      Spores 5–7 μ; cystidia none.
        Tubes very distinctly and evenly stratified, edges thin; spores 7 μ. 16. *F. jamaicensis.*
        Tubes unevenly stratified, edges thick; spores 5–6 μ. 17. *F. Maxoni.*

1. **Fomitiporia tropicalis** (Cooke) Murrill.

Fomes tropicalis Cooke, Grevillea 15: 22. 1886.

Broadly effused, separable, at least with age, rigid, woody, 15–50 cm. long, 5–10 cm. broad, 1–4 cm. thick; margin rounded, determinate, entire or slightly undulate, smooth, white, becoming fuliginous and subshining with age: context inconspicuous, pale-fuscous; hymenium convex, even, pallid; tubes distinctly stratified in several layers, which tend to separate with age, 5–8 mm. long each season, avellaneous within, the older layers tinted with isabelline, mouths very regular, circular, minute, 7–8 to a mm., edges thick, entire: spores subglobose, smooth, hyaline, 4 μ; hyphae subhyaline to avellaneous; cystidia none.

TYPE LOCALITY: Demerara, Guiana.
HABITAT: Dead trunks.
DISTRIBUTION: Nicaragua and Jamaica; also in Guiana.

2. **Fomitiporia dryophila** Murrill, sp. nov.

Effused, inseparable, rigid, irregularly elliptical, 2–4 cm. thick; margin obtuse, elevated at times, determinate, ferruginous, smooth, becoming blackish and rimose with age: context woody, conspicuous, fulvous; hymenium plane or convex, nearly smooth, ferruginous to grayish-umbrinous; tubes distinctly and several times stratified, 4–8 mm. long each season, fulvous within, somewhat lighter in the more recent layers, mouths subcircular, 6 to a mm., edges rather thin-walled, entire to slightly dentate: spores perfectly globose, smooth, thick-walled, hyaline, 7 μ; hyphae ferruginous, 3–4 μ; cystidia none.

Type collected at Back Bay, Mississippi, on a decayed live-oak stump, September 3, 1904, *Esther S. Earle.*
DISTRIBUTION: Georgia, Florida, and Mississippi.

3. **Fomitiporia cubensis** Murrill, sp. nov.

Effused, irregular, inseparable, rigid, 1–2.5 cm. thick; margin obtuse, elevated, narrowly sterile, glabrous or finely tomentose, undulate, ashy-white, blackening with age: context conspicuous, umbrinous, punky; hymenium very uneven, colliculose, more or less convex, pure ashy-white when young, discolored when older, distinctly and many times stratified; tubes whitish-stuffed, umbrinous in the older layers, grayish-avellaneous in

recent growths, about 3 mm. long each season, mouths circular, 4 to a mm., edges obtuse, rigid, entire: spores globose, ovoid, smooth, hyaline, 4–5 μ long; hyphae subhyaline to pale-brown, 3–4 μ; cystidia none.

Type collected at Ciego de Avila, Cuba, on an old log in a field, March 21, 1905, *F. S. Earle & W. A. Murrill 627.*

DISTRIBUTION: Cuba and Costa Rica.

4. **Fomitiporia obliquiformis** Murrill, sp. nov.

Broadly effused, inseparable, irregular, rigid, heavy, 5–15 mm. thick; margin thin, adnate, narrow, ferruginous-fulvous, finely tomentose, slightly undulate: context inconspicuous, ferruginous; hymenium convex, undulate, fulvous to avellaneous, very indistinctly stratified; tubes very oblique, 2–4 mm. long each season, ferruginous-fulvous and somewhat whitish-stuffed within, mouths oblique, subcircular, 4 to a mm., edges rather thick, entire: spores globose, smooth, hyaline, 6 μ; hyphae ferruginous; cystidia none.

Type collected near Cincinnati, Ohio, on hardwood logs, September 20, 1887, *A. P. Morgan 30.*

DISTRIBUTION: Pennsylvania and Ohio.

5. **Fomitiporia Langloisii** Murrill, sp. nov.

Effused, irregular, inseparable, rigid, 0.5–2 cm. thick; margin thin, adnate, subbyssoid, sterile, luteous: context inconspicuous, fulvous; hymenium plane to convex, usually very uneven, distinctly and several times stratified, the young pores luteous, changing to fulvous and finally umbrinous with a smoky pruinosity; tubes 2–3 mm. long each season, whitish-stuffed and avellaneous within, the layers separated by very thin cushions of ferruginous mycelium, mouths angular, 6 to a mm., edges thin, entire: spores globose, smooth, hyaline, 5–6 μ; hyphae luteous; cystidia none.

Type collected near St. Martinsville, Louisiana, on decaying pieces of deciduous wood in low woods, November 12, 1897, *A. B. Langlois 2525.*

DISTRIBUTION: South Carolina, Florida, Alabama, and Louisiana.

6. **Fomitiporia tsugina** Murrill, sp. nov.

Broadly effused, irregular, adnate, seceding at times with age, rigid, of rather light weight, 5–10 mm. thick; margin thin, adnate, irregular, narrowly sterile, ferruginous-fulvous, finely tomentose: context quite conspicuous, ferruginous, fibrous; hymenium plane or concave, somewhat uneven, ferruginous to subfuliginous, suffused with a grayish pruinosity; tubes indistinctly stratified, 2–4 mm. long each season, somewhat whitish-stuffed, ferruginous within, mouths circular, 4–5 to a mm., edges thick, entire: spores subglobose, smooth, hyaline, 6–8 μ; hyphae ferruginous, 3–4 μ; cystidia none.

Type collected at Hebron, New Hampshire, on a dead hemlock trunk, August 6–19, 1905, *Percy Wilson.*

DISTRIBUTION: New Hampshire and New York.

7. **Fomitiporia prunicola** Murrill, sp. nov.

Broadly effused, extending many meters at times on standing trunks, inseparable, rigid, 3–6 mm. thick; margin thin, adnate, determinate, rarely seceding with age, nearly glabrous, sterile, luteous to fulvous, entire or undulate: context conspicuous, fulvous; hymenium even or undulate, ferruginous to dark-fulvous, at length ashy-white and finally blackish-umbrinous in old weathered specimens; tubes indistinctly and several times stratified, whitish-stuffed and dark-fulvous within, 1–2 mm. long each season, usually oblique, mouths circular, minute, punctiform, 6–7 to a mm., edges thick, entire: spores subglobose, smooth, hyaline, 3.5–4.5 μ; hyphae ferruginous, 3 μ; cystidia none.

Type collected at "Camp Sunday," Medford township, Piscataquis County, Maine, on dead trunks of *Prunus-pennsylvanica*, August 28, 1905, *W. A. Murrill 1922.*

DISTRIBUTION: Maine, New Hampshire, and Ontario.

8. **Fomitiporia Earleae** Murrill, sp. nov.

Effused, subcircular or elongate and irregular, inseparable, rigid, 4–8 mm. thick; margin thin, adnate, narrow, sterile, irregular, flavous to ferruginous: context thin, ferruginous to fulvous; hymenium convex, even or undulate, refracting the light, flavous-

ferruginous to isabelline and finally pale-umbrinous, indistinctly stratified; tubes fulvous within, stuffed with pale-yellowish mycelium, 2–3 mm. long each season, mouths subcircular, 5–6 to a mm., edges rather thick, entire: spores globose, smooth, hyaline, copious, 5–6 μ; hyphae ferruginous; cystidia none.

Type collected at Biloxi, Mississippi, on dead oak branches, September 13, 1904, *Esther S. Earle 65*.

DISTRIBUTION: Florida, Mississippi, and Texas.

9. **Fomitiporia undulata** Murrill, sp. nov.

Effused, inseparable, irregular, rigid, woody, 2–5 mm. thick; margin thin, adnate, undulate, narrowly sterile, flavous to ferruginous, tomentose: context conspicuous, ferruginous-fulvous; hymenium undulate, plane or concave, avellaneous, sometimes cinereous near the margin, indistinctly stratified in two or three layers; tubes oblique, 1–1.5 mm. long each season, whitish-stuffed, avellaneous to umbrinous within, mouths angular, 3–4 to a mm., edges thin, firm, entire, slightly tinged with flesh-color: spores ovoid, smooth, hyaline, $5 \times 4\,\mu$; hyphae luteous, 3–4 μ; cystidia none.

Type collected near Punta Gorda, British Honduras, on the under side of a decayed log, October, 1906, *Morton E. Peck*.

DISTRIBUTION: Known only from the type locality.

10. **Fomitiporia cinchonensis** Murrill, sp. nov.

Broadly effused, irregular, inseparable, rigid, of medium weight, 3–6 mm. thick; margin thin, adnate, determinate, lobed, very narrowly sterile, flavous-luteous when young, brownish-black with age: context conspicuous, dark-fulvous to latericeous; hymenium convex, nearly even, grayish-umbrinous at maturity, melleous when very young, indistinctly stratified in 2–3 layers; tubes slender, whitish-stuffed, avellaneous within, 1–2 mm. long each season, mouths punctiform, circular, 5–6 to a mm., edges thick, entire: spores globose, smooth, hyaline, 2–3 μ; hyphae ferruginous; cystidia dark-fulvous, cuspidate, ventricose at the base, $12–18 \times 3–5\,\mu$.

Type collected at Cinchona, Jamaica, 1650 meters, on decayed deciduous wood, November 2, 1902, *F. S. Earle 411*.

DISTRIBUTION: Known only from the type locality.

11. **Fomitiporia pereffusa** Murrill, sp. nov.

Broadly effused, immersed, rigid, perennial, 5–7 mm. thick, frequently covering the entire under surface of logs; margin very narrow, fulvous, puberulent, becoming tumid, somewhat inflexed, glabrous and blackish with age: context fulvous, very thin, scarcely apparent in older specimens; tubes regular, brown and glistening, 6–8 to a mm., several times stratified, the strata distinct and about 2 mm. thick, mouths subcircular, usually oblique, slightly cinereous with age, edges thick, entire: spores smooth, globose, hyaline, 4–5 μ; cystidia $15–20 \times 5\,\mu$.

Type collected at Ohio Pyle, Pennsylvania, on a dead oak log, July 7, 1905, *W. A. Murrill 1130*.

DISTRIBUTION: Ontario to Alabama and west to Minnesota.

EXSICCATI: Ellis & Ev. Fungi Columb. *667*; Ellis & Ev. N. Am. Fungi *2510*.

12. **Fomitiporia Lloydii** Murrill, sp. nov.

Effused, elliptical or irregular, inseparable, rigid, rather light in weight, cracking in dried specimens, 5–8 mm. thick; margin thin, adnate, irregular, sterile, scanty, ferruginous, nearly glabrous: context inconspicuous, fulvous; hymenium somewhat uneven, slightly convex, ferruginous to fuliginous, opaque, distinctly stratified in 2–4 layers; tubes 2–4 mm. long each season, umbrinous within, mouths angular or irregular, 5–6 to a mm., edges thin, entire or slightly toothed: spores globose, smooth, hyaline, 5–6 μ; hyphae ferruginous; cystidia none.

Type collected in Ohio, on dead sassafras, *C. G. Lloyd 2801*.

DISTRIBUTION: Ohio.

13. **Fomitiporia laminata** Murrill, sp. nov.

Broadly effused, extending many centimeters along branches, inseparable, elongate-elliptical to irregular, rigid, 0.5–1 cm. thick; margin thin, adnate, nearly entire, ferruginous to fulvous, finely tomentose, narrow: context thin, inconspicuous, fulvous; hymenium very smooth, convex, glistening, distinctly and several times stratified, the layers separated by narrow, regular, fulvous lines; tubes 2–3 mm. long each season, usually oblique, whitish-stuffed, grayish-umbrinous within, mouths subcircular, 5 to a mm., edges thick, entire, ferruginous to fulvous, becoming avellaneous to umbrinous with age: spores globose, smooth, hyaline, 5 μ; hyphae ferruginous; cystidia none.

Type collected at "Camp Sunday," in Medford township, Piscataquis County, Maine, on dead alder trunks, August 28, 1905, *W. A. Murrill 1923*.

DISTRIBUTION: Maine, New Hampshire, Michigan, and Ontario.

14. **Fomitiporia ohiensis** Murrill, sp. nov.

Broadly effused, separable, irregular, coriaceous to rigid, 5–10 mm. thick; margin thin, broad, adnate, indefinite, finely tomentose, fulvous: context very thin, fulvous, plane, even, subglistening, fulvous to nearly fuliginous, more or less distinctly stratified in 2 or 3 layers, separated by thin fulvous cushions; tubes 2–4 cm. long each season, umbrinous within, not whitish-stuffed, mouths oblique, subcircular, edges rather thick, entire, fulvous when young, bay-brown when bruised: spores subglobose, smooth, hyaline, 4 μ; hyphae very pale-ferruginous; cystidia none.

Type collected in Ohio, on hardwood logs, *C. G. Lloyd 3130*.

DISTRIBUTION: Ohio.

15. **Fomitiporia flavomarginata** Murrill, sp. nov.

Effused, rigid, perennial, 5–7 $\times$ 10 $\times$ 0.3 cm.; margin thin, flavous, at length black, separating at times from the substratum: context thin, fulvous; tubes distinctly 2–3 times stratified, rigid, regular, nearly circular, 1.5 mm. long each season, 7–8 to a mm., umbrinous within and without, flavous in the older layers, mouths entire, rather thick-walled, glistening, at length fuliginous: spores smooth, globose, hyaline, thin-walled, copious, 3–4 μ; hyphae ferruginous; cystidia scanty, ferruginous, conical, pointed, 5 $\times$ 18 μ.

Type collected at Alto Cedro, Cuba, on decayed hardwood logs in a dense virgin forest, March 19, 1905, *F. S. Earle & W. A. Murrill 559*.

DISTRIBUTION: Known only from the type locality.

16. **Fomitiporia jamaicensis** Murrill, sp. nov.

Effused, elliptical, seceding with age, rigid, 5 mm. thick; margin thin, adnate, narrowly sterile, isabelline to fulvous, nearly glabrous, subentire: context inconspicuous, fulvous; hymenium convex, even, isabelline to umbrinous, distinctly stratified in 3 or 4 layers separated by very thin, fulvous cushions; tubes 2 mm. long each season, whitish-stuffed, avellaneous-umbrinous within, mouths circular, irregular, 5–7 to a mm., edges thin, undulate: spores subglobose, smooth, hyaline, copious, 7 μ; hyphae bright-ferruginous; cystidia none.

Type collected at Castleton, Jamaica, on a dead grape-fruit tree, October 28, 1902, *F. S. Earle 215*.

DISTRIBUTION: Known only from the type locality.

17. **Fomitiporia Maxoni** Murrill, sp. nov.

Effused, inseparable, narrow, rigid, woody, 5–8 cm. long, 5 mm. thick, mostly confined to crevices in the bark; margin thin, adnate, irregular, broadly sterile, finely tomentose, ferruginous: context conspicuous, fulvous; hymenium distinctly but unevenly stratified, glistening, changing color with the direction of the light from isabelline-avellaneous to umbrinous; tubes 1–2 mm. long each season, whitish-stuffed, avellaneous-isabelline within, mouths subcircular to slightly angular, regular, 6 to a mm., edges rather thick, firm, entire: spores subglobose, smooth, hyaline, copious, 5–6 μ; hyphae ferruginous, 3–4 μ; cystidia none.

Type collected in the vicinity of Santo Domingo de San Mateo, Costa Rica, 300 meters, on a decayed hardwood log, May 15–17, 1906, *W. R. Maxon 587*.

DISTRIBUTION: Known only from the type locality.

DOUBTFUL SPECIES

Boletus juglandinus Schw. Schr. Nat. Ges. Leipzig 1 : 99. 1822. Described from collections made by Schweinitz in North Carolina on trunks of *Juglans nigra* and *Platanus*. Types preserved at Philadelphia are immature, showing no spores : cystidia are absent, the hyphae deep-ferruginous.

17. **FOMITIPORELLA** Murrill, gen. nov.

Hymenophore resupinate, epixylous, perennial, inseparable, rigid : context thin, brown ; tubes brown at maturity, stratified, usually thick-walled and entire : spores globose or ovoid, smooth, brown ; hyphae brown ; cystidia rarely present.

Type species, *Poria umbrinella* Bres.

Sporophore 1 cm. or more thick.
- Tubes umbrinous, whitish-stuffed, and uniformly colored throughout. — 1. *F. betulina.*
- Tubes fulvous and not whitish-stuffed in the older layers, avellaneous and whitish-stuffed in the recent growth. — 2. *F. altocedronensis.*

Sporophore less than 1 cm. thick.
- Margin free ; cystidia present. — 3. *F. Demetrionis.*
- Margin adnate ; cystidia absent.
  - Hymenium flavous to melleous when young.
    - Tubes thin-walled.
      - Mouths circular ; spores 3–4 μ. — 4. *F. melleopora.*
      - Mouths angular ; spores 5–6 μ. — 5. *F. inermis.*
    - Tubes thick-walled. — 6. *F. Johnsoniana.*
  - Hymenium darker, ferruginous to umbrinous.
    - Tubes indistinctly stratified. — 7. *F. umbrinella.*
    - Tubes distinctly stratified.
      - Margin thin, adnate, ferruginous-fulvous, not blackening with age. — 8. *F. Langloisiana.*
      - Margin thick, somewhat elevated, ferruginous when young, blackening with age. — 9. *F. floridana.*

1. **Fomitiporella betulina** Murrill, sp. nov.

Broadly effused, inseparable, rigid ; margin irregular, finely tomentose and fulvous when young, becoming glabrous, smooth and brown or blackish with age : context very thin, punky, fulvous ; hymenium distinctly and many times stratified, 1–3 cm. thick, plane or slightly convex, umbrinous, changing color and refracting the light when young and growing, becoming chestnut-colored with age ; tubes slender, 2–3 mm. long each season, partly stuffed with white mycelium, mouths subcircular, 5–6 to a mm., edges thick, obtuse, entire : spores ovoid, smooth, fulvous, 4–5 μ long ; hyphae fulvous, 3–4 μ ; cystidia fulvous, pointed, ventricose, 10–30 μ in length.

Type collected on Boarstone Mountain, Piscataquis County, Maine, on birch trunks, September 12–14, 1905, *W. A. Murrill 2511.*

DISTRIBUTION : Maine and New Hampshire.

2. **Fomitiporella altocedronensis** Murrill, sp. nov.

Broadly effused, 1–2 cm. thick, inseparable from the matrix ; margin tomentose, ferruginous, irregular, purplish-discolored in old specimens : context thin, fulvous, ferruginous ; hymenium convex, smooth, distinctly stratified, slightly glistening, ferruginous to fulvous when young, becoming fumous or dark-avellaneous with age ; tubes 2–3 mm. long each season, fulvous in the older layers, whitish-stuffed and avellaneous in the growth of recent years, mouths minute, 6 to a mm., punctiform, edges very thick, entire : spores globose, smooth, brown, 5–6 μ ; hyphae ferruginous, 3–4 μ ; cystidia scanty, fulvous, conical, slightly ventricose, 15–25 μ.

Type collected at Alto Cedro, Cuba, on a dead trunk in a low dense virgin forest, March 19–20, 1905, *F. S. Earle & W. A. Murrill 541.*

DISTRIBUTION : Known only from the type locality.

3. **Fomitiporella Demetrionis** Murrill, sp. nov.

Effused, inseparable from the matrix ; margin determinate, undulate, free, finely tomentose, ferruginous : context rather thick, punky-fibrous, ferruginous ; hymenium nearly plane, distinctly stratified in 2 or 3 layers, 4–7 mm. thick, fulvous when young, castaneous-fuliginous with age ; tubes 2–4 mm. long each season, whitish-stuffed, the older

layers isabelline, the more recent avellaneous within, mouths minute, circular, 6–7 to a mm., edges rather thick, entire: spores subglobose, smooth, brown, 3–4 μ; hyphae ferruginous; cystidia fulvous, cuspidate, ventricose, 10–20 $\times$ 5–7 μ.

Type collected in Missouri, on dead deciduous wood, August, 1885, *C. H. Demetrio 19*.
DISTRIBUTION: Known only from the type locality.

4. **Fomitiporella melleopora** Murrill, sp. nov.

Effused, inseparable, irregular, rigid, 3–5 mm. thick; margin thin, undulate, slightly elevated, finely tomentose, flavous: context scarcely visible, fulvous; hymenium uneven, rather distinctly stratified; tubes 2–4 mm. long each season, fulvous within, mouths circular, nearly regular, 5–6 to a mm., flavous to melleous when young, becoming umbrinous with age, edges thick, entire: spores globose, thin-walled, smooth, pale-ferruginous, copious, 3–4 μ; hyphae ferruginous; cystidia none.

Type collected near New Orleans, Louisiana, on dead willow logs in damp woods, February 11, 1886, *A. B. Langlois 213*.
DISTRIBUTION: Known only from the type locality.

5. **Fomitiporella inermis** (Ellis & Ev.) Murrill.

Poria inermis Ellis & Ev. Proc. Acad. Phila. 1894: 322. 1894.

Widely effused, inseparable, seceding with age, much elongated, corky, rigid, thin the first year, but reviving two or three years and attaining a thickness of 5 mm. or more; margin thin, adnate, determinate, undulate or lobed, conspicuous, sterile, nearly glabrous, flavous to ferruginous, becoming reddish-brown with age: context inconspicuous, fulvous; hymenium umbrinous to fuliginous, uneven, brightly glistening, 2–4 times stratified; tubes 1.5–2.5 mm. long each season, fulvous to bay within, mouths angular, regular, 4 to a mm., edges thin, entire, sometimes uneven: spores globose to ovoid, smooth, ferruginous, 5 μ; cystidia none.

TYPE LOCALITY: Newfield, New Jersey.
HABITAT: Dead branches of various deciduous trees and shrubs.
DISTRIBUTION: Eastern Canada to Louisiana and west to Michigan.
EXSICCATI: Ellis, N. Am. Fungi *313*.

6. **Fomitiporella Johnsoniana** Murrill, sp. nov.

Effused, inseparable, suborbicular to irregular, rigid, 5 mm. or more thick; margin thin, flavous, narrowly sterile, undulate, nearly glabrous: context distinctly visible, 2–3 mm. thick in some places, fulvous, corky; hymenium uneven, stratified; tubes varying in length, 1–4 mm. long each season, avellaneous-umbrinous within, fulvous-tinted in the older layers, mouths angular, 5–6 to a mm., edges thin, entire or slightly dentate, flavous when young, becoming luteous and finally umbrinous at maturity: spores globose, smooth, brownish, 3–4 μ; hyphae ferruginous; cystidia none.

Type collected at Ann Arbor, Michigan, on rotten deciduous logs, September 8, 1894, *L. N. Johnson 1764*.
DISTRIBUTION: Michigan.

7. **Fomitiporella umbrinella** (Bres.) Murrill.

Poria umbrinella Bres. Hedwigia 35: 282. 1896.

Broadly effused, inseparable from the matrix; margin undulate, opaque, hispid-tomentose, castaneous to umbrinous: context scarcely visible, brown, membranous; hymenium indistinctly stratified, umbrinous, ferruginous-tinted when young, convex, smooth, glistening; tubes long and slender, 5–10 mm., whitish-stuffed in the older layers, fulvous in the recent growth, mouths nearly circular, 5–6 to a mm., edges rather obtuse, entire: spores globose, deep-ferruginous, smooth, 4–5 μ; hyphae ferruginous, 2–3 μ; cystidia none.

TYPE LOCALITY: State of Santa Catharina, Brazil.
HABITAT: Dead wood.
DISTRIBUTION: Jamaica; also in Brazil.

8. **Fomitiporella Langloisiana** Murrill, sp. nov.

Effused, inseparable, subelliptical, irregular with age, rigid, 2–5 mm. thick; margin thin, adnate, irregular, narrow, ferruginous-fulvous: context very thin, fulvous; hymenium

somewhat uneven, distinctly stratose; tubes 2–3 mm. long each season, fulvous and somewhat whitish-stuffed within, mouths circular, regular, 6 to a mm., ferruginous when young, fulvous-umbrinous with age, refracting the light, edges rather thick, entire: spores subglobose, smooth, ferruginous, copious, 3.5–4.5 μ; hyphae ferruginous; cystidia none.

Type collected near St. Martinsville, Louisiana, on decaying logs in swampy woods, December 14, 1895, *A. B. Langlois 2430.*
DISTRIBUTION: Louisiana.

9. **Fomitiporella floridana** Murrill, sp. nov.

Broadly effused, rigid, inseparable, 4–7 mm. thick; margin determinate, narrow, ferruginous when young, blackish with age: context almost invisible, brown; hymenium nearly plane, distinctly stratified; tubes 1.5–3 mm. long each season, fulvous and whitish-stuffed within, mouths angular, 5–6 to a mm., grayish-umbrinous, edges thin, entire or slightly uneven: spores globose, smooth, ferruginous, copious, 3–4 μ; hyphae ferruginous; cystidia none.

Type collected in Florida, on dead deciduous wood, January, 1887, *W. W. Calkins 850.*
DISTRIBUTION: Known only from the type locality.

18. **TINCTOPORIA** Murrill, gen. nov.

Hymenophore resupinate, epixylous, annual: context inconspicuous, the mycelium staining the substratum a deep orange-red; tubes exceedingly minute, thin-walled, black: spores smooth, ovoid, hyaline; cystidia none.

Type species, *Tinctoporia aurantiotingens* Murrill.

1. **Tinctoporia aurantiotingens** (Ellis & Macbr.) Murrill, sp. nov.

Poria Fuligo aurantiotingens Ellis & Macbr. Bull. Lab. Nat. Hist. Univ. Iowa 3[2]: 191. 1896.

Hymenophore totally resupinate, imbedded, inseparable from the matrix, exceedingly thin, the mycelium imparting a deep orange-red stain to the underlying wood; tubes about 30 μ long and 50 μ broad, black, thin-walled, angular, entire: spores smooth, ovoid, hyaline, 2.5–3.5 μ; cystidia none.

Type collected in Mexico, on decayed hardwood logs, in 1891, *Charles L. Smith.*
DISTRIBUTION: Mexico.

19. **MELANOPORELLA** Murrill, gen. nov.

Hymenophore resupinate, epixylous, annual: context soft and punky, chocolate-brown; tubes of medium size, irregular, rigid, thin-walled, concolorous at maturity, the mouths at length darker: spores smooth, thick-walled, brown; hyphae brown; cystidia none.

Type species, *Polyporus carbonaceus* Berk. & Curt.

1. **Melanoporella carbonacea** (Berk. & Curt.) Murrill.

Polyporus carbonaceus Berk. & Curt. Jour. Linn. Soc. 10: 317. 1868.

Broadly effused, inseparable, of light weight, somewhat flexible, corky, 3–8 mm. thick; margin thin, somewhat elevated, tomentose, undulate, chestnut-colored: context conspicuous, 1–2 mm. thick, punky, dull bay-brown; hymenium uneven, proliferous at times, nearly black, with a tinge of bay; tubes large, angular, somewhat irregular, 1–2 to a mm., edges thin, dentate: spores smooth, thick-walled, brown, with a large central vacuole, 9–10 μ; hyphae dark-brown; cystidia none.

TYPE LOCALITY: Cuba.
HABITAT: Dead trunks.
DISTRIBUTION: Cuba.

20. **MELANOPORIA** Murrill, gen. nov.

Hymenophore resupinate, epixylous, perennial: context firm, fibrous, fuliginous, with a horny black layer next to the substratum; tubes small, regular, thin-walled, stratose, fuliginous within, the mouths black: spores smooth, ovoid, black; hyphae black or fuliginous; cystidia not present.

Type species, *Polyporus niger* Berk.

1. **Melanoporia nigra** (Berk.) Murrill.

Polyporus niger Berk. Lond. Jour. Bot. 4: 304. 1845.

Broadly effused, inseparable, rigid, heavy, 0.5–2.5 cm. thick; margin sterile, nearly smooth, slightly elevated at times, adnate, irregular, black: context thin, fuliginous, firm, with a horny black layer next to the substratum; hymenium distinctly stratified, uneven, black; tubes 2–4 mm. long each season, fuliginous within, mouths small, regular, thin-walled, 4 to a mm., edges entire: spores smooth, ovoid, thick-walled, black, $7 \times 4.5 \mu$; hyphae black or dark-brown; cystidia none.

TYPE LOCALITY: Ohio.
HABITAT: Dead oak trunks or stumps.
DISTRIBUTION: South Carolina, Ohio, Missouri, and Wisconsin.
EXSICCATI: Rav. Fungi Car. 1: *20*.

21. **IRPICIPORUS** Murrill, Bull. Torrey Club **32**: 471. 1905.

Hymenophore annual, epixylous, sessile, effused-reflexed, white or pallid throughout; surface anoderm, glabrous or velvety, not distinctly zonate, margin acute: context white, coriaceous or corky; hymenium hydnoid or irpiciform, with traces of shallow obsolete tubes near the margin: spores smooth, hyaline.

Type species, *Irpex mollis* Berk. & Curt.

Margin of pileus cirrhose; pileus glabrous, 2 mm. thick.	1. *I. cubensis*.
Margin of pileus not cirrhose.	
Teeth 1 cm. or more long; pileus usually large and thick.	2. *I. mollis*.
Teeth less than 0.5 cm. long; pileus thin and shortly reflexed.	3. *I. lacteus*.

1. **Irpiciporus cubensis** (Berk. & Curt.) Murrill.

Irpex cubensis Berk. & Curt. Jour. Linn. Soc. 10: 326. 1868.

Pileus reniform, sessile, $0.5–0.7 \times 1.5 \times 0.2$ cm.; surface glabrous, radiate-lineate, white to isabelline, azonate, smooth; margin deflexed, cirrhose, concolorous: context white, fragile, less than 1 mm. thick; tubes 1–1.5 mm. long, white to discolored, 3–4 to a mm., very soon splitting into teeth, which are compressed, pointed and dentate: spores[1] not examined.

TYPE LOCALITY: Cuba.
HABITAT: Dead wood.
DISTRIBUTION: Known only from the type locality.

2. **Irpiciporus mollis** (Berk. & Curt.) Murrill, Bull. Torrey Club **32**: 471. 1905.

Irpex mollis Berk. & Curt. Jour. Bot. & Kew Misc. 1: 236. 1849.
Irpex crassus Berk. & Curt. Jour. Bot. & Kew Misc. 1: 236. 1849. (Type from North Carolina, on a decaying oak.)

Pileus sessile, dimidiate, imbricate, decurrent, $3–4 \times 4–8 \times 1–3$ cm.; surface white, finely pubescent, azonate, sulcate at times, often aculeate behind with age: context white, coriaceous, 1–5 mm. thick; tubes soon splitting into teeth, which are 1–2 cm. long, compressed to subulate, slender, more or less pointed, dentate or incised, puberulent to glabrous, white to pale flesh-colored, about 1 mm. apart at the base: spores globose, smooth, hyaline, 5–7 μ; hyphae 6 μ; cystidia none.

TYPE LOCALITY: Santee river, South Carolina.
HABITAT: Dead deciduous wood.
DISTRIBUTION: Temperate North America.
EXSICCATI: Ellis & Ev. N. Am. Fungi *320*; Ellis, Ev. & Barth. Fungi Columb. *1735*.

3. **Irpiciporus lacteus** (Fries) Murrill.

Sistotrema lacteum Fries, Obs. Myc. 2: 266. *pl. 6, f. 1*. 1818.
Boletus Tulipiferae Schw. Schr. Nat. Ges. Leipzig 1: 99. 1822. (Type from North Carolina.)
Irpex sinuosus Fries, Elench. Fung. 1: 145. 1828. (Type from Sweden, on fallen oak branches.)
Irpex pallescens Fries, Epicr. Myc. 522. 1838. (Type from North America, on trunks of *Liriodendron*.)
Irpex Tulipiferae Fries, Epicr. Myc. 523. 1838.
Irpiciporus Tulipiferae Murrill, Bull. Torrey Club 32: 472. 1905.

[1] The spore-characters of many of the species treated in the following pages have been obtained for me by Mr. Guy West Wilson. It has been impossible to examine the spores in many of the older type specimens, and in some specimens spores could not be found.

Pileus extensively effused, shortly reflexed, imbricate, sessile, dimidiate, laterally connate, 0–1.5 × 1–4 × 0.1–0.2 cm.; surface white, subzonate, concentrically furrowed in large specimens, villose; margin very thin, deflexed, undulate to lobed: context white, membranous, less than 1 mm. thick; tubes short, irregular, white to isabelline, 1–3 mm. long, mouths angular, about 2 to a mm., edges uneven, soon splitting into teeth, which are compressed, pointed, fimbriate, dentate to incised: spores cylindrical, slightly curved, smooth, hyaline, 6–7 × 2–3 μ; hyphae septate, 2–3 μ; basidia 16–20 μ.

TYPE LOCALITY: Sweden.
HABITAT: Dead deciduous wood.
DISTRIBUTION: North America; also in Europe and Asia.
EXSICCATI: Ellis, N. Am. Fungi *103, 319;* Thüm. Myc. Univ. *205, 1208;* Shear, N. Y. Fungi *46;* Rav. Fungi Car. 1: *26;* Ellis & Ev. N. Am. Fungi *2016, 2310;* Ellis & Ev. Fungi Columb. *3;* Romell, Fungi Scand. *20;* Barth. Fungi Columb. *2327.*

DOUBTFUL SPECIES

Irpex pityreus Berk. & Curt. Grevillea 1: 102. 1872. Described from specimens collected by Bennett in Rhode Island. The types at Kew are small and discolored, leaving their identity in doubt.

22. **PORONIDULUS** Murrill, Bull. Torrey Club **31**: 425. 1904.

Hymenophore annual, tough, sessile, epixylous, at first sterile and cup-like, the fertile portion developing from the sterile: context white, fibrous; tubes short, thin-walled, mouths polygonal: spores ellipsoidal, smooth, hyaline.

Type species, *Boletus conchifer* Schw.

1. **Poronidulus conchifer** (Schw.) Murrill, Bull. Torrey Club **31**: 426. 1904.

Boletus conchifer Schw. Schr. Nat. Ges. Leipzig 1: 98. 1822.
Boletus virgineus Schw. Schr. Nat. Ges. Leipzig 1: 98. 1822. (Type from North Carolina.)

Pileus thin, coriaceous, dimidiate to flabelliform, usually narrowly attached, conchate, springing from a sterile, cup-like structure, which usually appears on the mature sporophore, near the base, 1.5–2 × 2–4 × 0.1–0.2 cm.; surface white to isabelline, with pale-latericeous zones, finely tomentose to glabrous, the sterile portion avellaneous, with narrow, black, concentric lines; margin thin, concolorous, undulate: context very thin, membranous, white, less than 1 mm. in thickness; tubes short, about 1 mm. long, thin-walled, white, mouths angular, irregular, 3 to a mm., edges thin, uneven, dentate: spores ellipsoidal, smooth, hyaline.

TYPE LOCALITY: North Carolina.
HABITAT: Fallen branches and dead limbs of elm.
DISTRIBUTION: Eastern Canada to Alabama and west to Kansas.
EXSICCATI: Rav. Fungi Am. *704;* Rav. Fungi Car. **3**: *11;* Ellis, N. Am. Fungi *1303;* Rab.-Wint. Fungi Eur. *3429.*

23. **CORIOLUS** Quél. Ench. Fung. 175. 1886.

Hansenia Karst. Medd. Soc. Faun. Fl. Fenn. **5**: 39. 1879. Not *Hansenia* Turcz. 1844.
Cyclomycetella Murrill; Bull. Torrey Club **31**: 422. 1904.

Hymenophore annual, epixylous, sessile, zonate, anoderm, hairy or glabrous: context thin, white, flexible, fibrous, leathery; tubes thin-walled, white, at length splitting into irpiciform teeth in several species, mouths polygonal or irregular: spores smooth, hyaline.

Type species, *Polyporus zonatus* Fries.

Tubes more or less entire, at least until the sporophore is quite old.
  Surface of pileus wholly or partly glabrous when mature or clothed only with inconspicuous hairs.
    Pileus not entirely glabrous at maturity.
      Pileus marked at maturity with glabrous zones of a different color from the rest of the surface.
        Glabrous zones large, numerous, conspicuously and variously colored. 1. *C. versicolor.*
        Glabrous zones small and comparatively inconspicuous.
          Surface villose between the zones, which are late in appearing; plants small, 1–2 cm. in diameter. 2. *C. hirsutulus.*

- Surface minutely pubescent or tomentose between the zones; plants usually much larger.
  - Hymenium white or yellowish.
    - Tubes small, 5 to a mm., perfectly regular and entire. 3. *C. ectypus.*
    - Tubes twice as large, often irregular from splitting; glabrous zones late in appearing and sometimes absent. 4. *C. pubescens.*
  - Hymenium umbrinous or fuscous.
    - Hymenium umbrinous; surface opaque, with very few zones. 5. *C. alabamensis.*
    - Hymenium fuscous; surface shining, multizonate. 6. *C. sector.*
- Pileus not marked with glabrous zones, but nearly uniform in color and rarely shining.
  - Sporophore semiresupinate, narrowly reflexed.
    - Tubes 1 cm. or more in length. 7. *C. subluteus.*
    - Tubes only a few millimeters long.
      - Tubes large, hexagonal, 1 mm. broad. 8. *C. hexagoniformis.*
      - Tubes minute, circular to angular, 5–7 to a mm. 9. *C. depauperatus.*
  - Sporophore normally pileate, sometimes decurrent.
    - Surface entirely devoid of zones or concentric furrows. 10. *C. pallidofulvellus.*
    - Surface somewhat zonate or concentrically furrowed.
      - Margin broadly sterile, the sterile zone about 2 mm. broad. 11. *C. limitatus.*
      - Margin fertile or narrowly sterile.
        - Surface milk-white, concentrically furrowed. 12. *C. delectans.*
        - Surface avellaneous, with isabelline zones. 13. *C. balsameus.*
- Pileus entirely glabrous at maturity.
  - Surface brown or blackish, multizonate.
    - Pileus marked with brown and black zones; temperate species. 14. *C. planellus.*
    - Pileus marked with brown and tawny zones; tropical species. 15. *C. armenicolor.*
  - Surface white to isabelline, sometimes with darker spots or lines, but light-colored in general appearance.
    - Hymenium lilac-colored, often faded in herbarium specimens. 16. *C. brachypus.*
    - Hymenium white or yellowish, sometimes discolored.
      - Margin of pileus entire or lobed, not becoming fimbriate or lacerate at maturity.
        - Pileus extremely thin, less than 1 mm., very flexible. 17. *C. haedinus.*
        - Pileus not as above.
          - Surface and tubes milk-white throughout, even in dried specimens. 18. *C. substipitatus.*
          - Surface white or yellowish, rarely tinged with bay behind; tubes becoming yellowish or tawny.
            - Context punky, 2–3 mm. thick; tubes 6 to a mm. 19. *C. subectypus.*
            - Context fibrous, 1 mm. thick; tubes 7–8 to a mm. 20. *C. hondurensis.*
            - Context fleshy-tough, 1–3 mm. thick; tubes 4–5 to a mm.; pileus almost brittle when dry. 21. *C. ochrotinctellus.*
          - Surface isabelline or pale-fulvous, multizonate, the zones usually pale-latericeous.
            - Surface rough, scabrous. 22. *C. Lloydii.*
            - Surface very smooth and glabrous.
              - Surface isabelline-fulvous throughout; hymenium becoming fulvous. 23. *C. leiodermus.*
              - Surface isabelline in front with pale-latericeous zones, latericeous behind; hymenium becoming pale-isabelline. 24. *C. concentricus.*
      - Margin of pileus very thin, becoming fimbriate or lacerate at maturity.
        - Tubes large, 2–3 to a mm., margin fimbriate. 25. *C. Drummondii.*
        - Tubes only half as large, margin lacerate. 26. *C. membranaceus.*
- Surface of pileus clothed entirely with a conspicuous hairy covering.
  - Pileus 0.5 cm. or more in thickness and several centimeters broad.
    - Surface roughly hirsute. 27. *C. nigromarginatus.*
    - Surface finely hirtose-tomentose. 28. *C. subchartaceus.*
  - Pileus much thinner.
    - Hymenium becoming wholly or partly fuscous; tubes broad and very shallow.
      - Surface latericeous-fulvous, except near the margin. 29. *C. fulvo-umbrinus.*
      - Surface white to cinereous or isabelline.
        - Tubes regular in shape and size; plants tropical. 30. *C. pinsitus.*
        - Tubes irregular both in size and shape; plants confined to the southern United States. 31. *C. sericeohirsutus.*
    - Hymenium not becoming fuscous.
      - Hymenium lilac-colored; plant minute. 32. *C. sublilacinus.*
      - Hymenium white or slightly discolored.
        - Surface more or less purple, marked with a few concentric lines. 33. *C. scutatus.*
        - Surface white to cinereous, marked with numerous concentric lines. 34. *C. pavonius.*

Tubes soon breaking up into long irpiciform teeth.
  Plants large, 6–20 cm. wide and 5–10 mm. thick.
    Pileus 5–10 cm. broad, surface fibrillose-tomentose. 35. *C. biformis.*
    Pileus 10–20 cm. broad, surface roughly villose-tomentose. 36. *C. maximus.*
  Plants much smaller and always very thin.
    Pileus 1 cm. or less broad; plants confined to the tropics.
      Pileus flabelliform, glabrous. 37. *C. sobrius.*
      Pileus subcampanulate, pendulous, erumpent, finely tomentose. 38. *C. cyphelloides.*
    Pileus more than 1 cm. broad.
      Surface ashy-white, villose; plants confined to coniferous wood. 39. *C. abietinus.*
      Surface wood-colored, tomentose; plant found on both deciduous and coniferous wood. 40. *C. prolificans.*

1. **Coriolus versicolor** (L.) Quél. Ench. Fung. 175. 1886.

Boletus versicolor L. Sp. Pl. 1176. 1753.
Polyporus versicolor Fries, Syst. Myc. 1: 369. 1821.
Polystictus azureus Fries, Nov. Symb. 93. 1851. (Type from Mexico.)

Pileus densely imbricate, very thin, sessile, dimidiate, conchate, 2–4 × 3–7 × 0.1–0.2 cm.; surface smooth, velvety, shining, marked with conspicuous, glabrous zones of various colors, mostly latericeous, bay or black; margin thin, sterile, entire: context thin, membranous, fibrous, white; tubes punctiform, less than 1 mm. long, white to isabelline within, mouths circular to angular, regular, even, 4–5 to a mm., edges thick and entire, becoming thin and dentate, white, glistening, at length opaque-isabelline or slightly umbrinous: spores allantoid, smooth, hyaline, 4–6 × 1–2 μ; hyphae 2–6 μ; cystidia none.

TYPE LOCALITY: Europe.
HABITAT: Dead wood.
DISTRIBUTION: Cosmopolitan.
EXSICCATI: Ellis, N. Am. Fungi *7, 1304;* Ellis & Ev. Fungi Columb. *301;* Ellis & Ev. N. Am. Fungi *2509;* Rav. Fungi Car. 1: *14;* Rav. Fungi Am. *211;* Shear, N. Y. Fungi *39;* Romell, Fungi Scand. *14;* Linhart, Fungi Hung. *148;* Sydow, Myc. Mar. *1708;* Thüm. Fungi Austr. *916;* Krieger, Fungi Sax. *718;* Cavara, Fungi Longob. *15.*

2. **Coriolus hirsutulus** (Schw.) Murrill, Bull. Torrey Club 32: 643. 1906.

Polyporus hirsutulus Schw. Trans. Am. Phil. Soc. II. 4: 156. 1832.

Pileus small, thin, coriaceous, conchate, sessile or umbonate-affixed, dimidiate, 0.5–0.8 × 1–1.5 × 0.1–0.2 cm.; surface smooth, azonate or narrowly zoned, conspicuously strigose-hoary, the zones glabrous and yellowish-brown: margin thin, inflexed, becoming fimbriate: context thin, white, fibrous; tubes punctiform, less than 1 mm. long, white to pallid within, mouths regular, slightly angular, 4–5 to a mm., edges thin, entire to slightly dentate: spores smooth, hyaline.

TYPE LOCALITY: Bethlehem, Pennsylvania.
HABITAT: Dead branches of *Sassafras* and certain other kinds of deciduous wood.
DISTRIBUTION: Eastern Canada to Louisiana and west to Ohio.

3. **Coriolus ectypus** (Berk. & Curt.) Pat. Tax. Hymén. 94. 1900.

Polyporus ectypus Berk. & Curt. Grevillea 1: 52. 1872.

Pileus tough, rigid or slightly flexible, imbricate, sessile or umbonate-sessile, dimidiate, conchate, 3–7 × 4–8 × 0.5–0.7 cm.; surface finely tomentose to nearly glabrous, smooth, pale-isabelline with pale-rufous zones; margin thin, entire, sterile: context punky, white, zonate, 2–4 mm. thick; tubes 2–3 mm. long, white within, mouths circular to slightly angular, very regular, 4–5 to a mm., edges thick, entire, pallid, becoming thin, slightly dentate, glistening and pale-avellaneous at maturity: spores ellipsoidal, smooth, hyaline, 2 × 3 μ; hyphae 3 μ; cystidia none.

TYPE LOCALITY: South Carolina.
HABITAT: Dead deciduous wood.
DISTRIBUTION: South Carolina, Georgia, Florida, and Louisiana.
EXSICCATI: Ellis & Ev. N. Am. Fungi *2011;* Rav. Fungi Am. *716.*

4. **Coriolus pubescens** (Schum.) Murrill, Bull. Torrey Club 32: 645. 1906.

Boletus pubescens Schum. Enum. Pl. Saell. 2: 384. 1803.
Polyporus pubescens Fries, Obs. Myc. 1: 126. 1815.

Polyporus Sullivantii Mont. Ann. Sci. Nat. II. 18: 243. 1842. (Type from Ohio.)
Leptoporus pubescens Pat. Tax. Hymén. 84. 1900.

Pileus rather thick, imbricate, laterally connate, sessile, dimidiate or flabelliform, conchate, 3–5 × 4–8 × 0.2–0.4 cm.; surface white, zonate, hirtose-villose to nearly glabrous, finely radiate-lineate in front at times, often radiately-furrowed or slightly plicate; margin at times thin, but usually obtuse, somewhat inflexed: context thin, white, fibrous, 1–2 mm. thick; tubes white, 2–4 mm. long, mouths angular, regular, 2–3 to a mm., edges very thin, entire to denticulate, white to discolored: spores cylindrical, subcurved, smooth, hyaline, 6–8 × 2–3 μ; hyphae 4–5 μ; cystidia none.

TYPE LOCALITY: Sweden.
HABITAT: Decaying deciduous wood.
DISTRIBUTION: Ontario to New York, Ohio, and Iowa; also in Europe.
EXSICCATI: Ellis & Ev. N. Am. Fungi *1933*; Ellis, N. Am. Fungi *803*; Shear, N. Y. Fungi *33*.

5. **Coriolus alabamensis** Murrill, sp. nov.

Pileus thin, densely imbricate, rigid when dry, sessile, dimidiate, convex above, concave below, 2 × 3–4 × 0.1–0.2 cm.; surface hirtose-tomentose, isabelline, opaque, with 1–3 concentric, nearly glabrous, avellaneous to fuliginous, depressed zones near the margin, which is thin, sterile, pallid, somewhat plicate, and entire to undulate: context thin, white, fibrous; tubes punctiform, less than 1 mm. long, white to pallid within, mouths angular, rather irregular, 3–5 to a mm., edges thin, entire, white to avellaneous, sometimes umbrinous in dried specimens: spores smooth, hyaline.

Type collected at Auburn, Alabama, on dead wood, April, 1897, *F. S. Earle & C. F. Baker 12*.
DISTRIBUTION: Known only from the type locality.

6. **Coriolus sector** (Ehrenb.) Pat. Tax. Hymén. 94. 1900.

Boletus sector Ehrenb. Horae Phys. Berol. 86. 1820.
Polyporus Friesii Klotzsch, Linnaea **8**: 487. 1833.
Polyporus floridanus Berk. Ann. Mag. Nat. Hist. **10**: 376. 1843. (Type from Florida.)
Polystictus Oniscus Fries, Nov. Symb. 82. 1851. (Type from Mexico.)
? *Polystictus Ravenelii* Berk. & Fr.; Fries, Nov. Symb. 82. 1851. (Type from South Carolina.)
Polyporus ludens Speg. Anal. Soc. Ci. Argent. **17**: 44. 1884. (Type from Paraguay.)
Polystictus nebularis Cooke, Grevillea **15**: 23. 1886. (Type from Brazil.)
Coriolus floridanus Pat. Tax. Hymén. 94. 1900.

Pileus rather thin, flexible, flabelliform, often spuriously short-stipitate, imbricate, laterally connate, 2–4 × 3–6 × 0.1–0.2 cm.; surface multizonate, finely radiate-striate, often plicate, silky, usually shining, more or less tomentose near the base, avellaneous to isabelline; margin entire to fimbriate or deeply dissected, sometimes palmate: context thin, coriaceous, avellaneous, about 0.5 mm. thick; tubes 0.5–1 mm. long, avellaneous within, mouths angular, irregular, very variable in size, 2–6 to a mm., edges thin, dentate to lanceolate, avellaneous to fuliginous: spores globose, smooth, hyaline, 3.5–5 μ; hyphae 4 μ.

TYPE LOCALITY: Southern Brazil.
HABITAT: Dead wood.
DISTRIBUTION: South Carolina to the West Indies, and Central America; also in Brazil.
ILLUSTRATIONS: Ehrenb. *loc. cit. pl. 18, f. 6*; Klotzsch, *loc. cit. pl. 11*.
EXSICCATI: Ule, Myc. Bras. *46*; Rav. Fungi Car. 1: *11*; Ellis, N. Am. Fungi *601*; Rav. Fungi Am. *7*.

7. **Coriolus subluteus** (Ellis & Ev.) Murrill, Bull. Torrey Club **32**: 646. 1906.

Polyporus subluteus Ellis & Ev. Am. Nat. **31**: 339. 1897.

Pileus broadly effused, narrowed reflexed, thick, white, subimbricate, the reflexed portion 0–2 × 2–4 × 0.5–1 cm.; surface smooth, tomentose, indistinctly zonate; margin obtuse, undulate: context soft and spongy, white, 3–5 mm. thick; hymenium uneven, subcolliculose; tubes circular to angular or slightly sinuous, 5–10 mm. long, white within, mouths large, 2–3 to a mm., edges thin, white to yellowish, entire to slightly toothed: spores oblong, slightly pointed, smooth, hyaline, 4–6 × 1.5–2 μ.

TYPE LOCALITY: Canada.
HABITAT: Dead beech trunks.
DISTRIBUTION: Known only from the type locality.

8. **Coriolus hexagoniformis** Murrill, sp. nov.

Pileus resupinate, effused, narrowly reflexed, white throughout, slightly stramineous in dried specimens, 0–0.3 × 2–4 × 0.1–0.2 cm.; surface soft, nearly glabrous, azonate; margin thin, irregular, lobed, sometimes inflexed: context thin, white, fibrous; tubes large, shallow, about 1 mm. deep, mouths hexagonal, quite regular, 1 mm. in diameter, edges thin, entire or slightly dentate: spores smooth, hyaline.

Type collected at Auburn, Alabama, on dead pine branches, December 15, 1900, *F. S. Earle*.
DISTRIBUTION: Alabama.

9. **Coriolus depauperatus** (Pat.) Murrill.

Polystictus depauperatus Pat. Jour. de Bot. 3: 166. 1889.

Pileus widely effused, narrowly reflexed, very thin, soft, spongy, flexible, the reflexed portion 0–5 mm. broad, 1 mm. or less thick; surface white, spongy-tomentose, azonate; margin very thin, concolorous, broadly sterile at times: context white, membranous; tubes punctiform, very short, white within, mouths circular to slightly angular, 5 to a mm., edges thin, entire to dentate, white, becoming very pale-yellowish on drying: spores smooth, hyaline.

TYPE LOCALITY: Puerto Cerico, Venezuela.
HABITAT: Trunks of trees and dead wood in fields.
DISTRIBUTION: Cuba; also in Venezuela.

10. **Coriolus pallidofulvellus** Murrill.

Polyporus pallidocervinus Mont. Pl. Cell. Cuba 397. 1842. Not *P. pallidocervinus* Schw. 1832.

Pileus imbricate, sessile, decurrent, dimidiate, conchate, thin, coriaceous, flexible, 1–1.5 × 2–3 × 0.1–0.2 cm.; surface isabelline to pale-fulvous, slightly virgate with striate fibers, finely tomentose, azonate; margin thin, subentire, incurved when dry: context punky-fibrous, tough, pallid, less than 1 mm. thick; tubes very short, less than 1 mm., mouths angular, irregular, flaccid, 2–4 to a mm., edges thin, dentate to lacerate, white to fulvous: spores smooth, hyaline.

TYPE LOCALITY: Cuba.
HABITAT: Dead wood.
DISTRIBUTION: Cuba.

11. **Coriolus limitatus** (Berk. & Curt.) Murrill.

Trametes limitata Berk. & Curt. Grevillea 1: 66. 1872.

Pileus thin, coriaceous, slightly flexible, applanate, dimidiate to suborbicular, sessile, 2 × 2.5–3 × 0.1–0.2 cm.; surface finely tomentose, indistinctly zoned, uniformly dull-isabelline in dried specimens, smooth or very slightly rugose; margin acute, entire, sterile for about 2 mm.: context thin, fibrous, very firm, but flexible, 0.5 mm. thick; tubes short, 1 mm. long, tinted with pale-latericeous within, mouths minute, regular, angular, edges very thin, entire to slightly dentate, white, tinged with flesh color: spores not examined.

TYPE LOCALITY: New Mexico.
HABITAT: Decayed wood.
DISTRIBUTION: Known only from the type locality.

12. **Coriolus delectans** Murrill, sp. nov.

Pileus confluent-effused, subimbricate, broadly reflexed and expanded, dimidiate to reniform, applanate or convex above, concave below, very thin, soft and tough, very flexible, 2–4 × 3–6 × 0.1 cm.; surface villose-tomentose, uniformly milk-white, marked with a few indistinct concentric furrows of variable width and depth; margin very thin, flaccid, entire to undulate, rarely lobed: context white, soft, tough, less than 1 mm. thick, tubes punctiform, white, less than 1 mm. long, mouths angular, irregular, 4–5 to a mm., soon lacerate, but not becoming irpiciform, edges very thin, flaccid, lacerate-dentate, white, stramineous in dried specimens: spores smooth, hyaline.

Type collected in Alto Cedro, Cuba, on a small dead fallen hardwood trunk in a dense virgin forest, March 20, 1905, *F. S. Earle & W. A. Murrill 431*.
DISTRIBUTION: Known only from the type locality.

13. **Coriolus balsameus** (Peck) Murrill.

Polyporus balsameus Peck, Ann. Rep. N. Y. State Mus. 30: 46. 1878.

Pileus rather thin, but almost rigid, sessile, dimidiate, conchate, 2 × 2.5–3 × 0.1–0.3 cm.; surface nearly plane, slightly and unequally villose-tomentose, especially behind, avellaneous, marked with isabelline zones; margin thin, incurved, entire or undulate: context white, fibrous, less than 1 mm. thick; tubes short, white to pallid within, mouths small, angular, regular, 4–6 to a mm., edges thin, white, denticulate: spores not examined.

TYPE LOCALITY: Adirondack Mountains, New York.
HABITAT: Trunks of *Abies balsamea*.
DISTRIBUTION: New York.

14. **Coriolus planellus** Murrill, Bull. Torrey Club 32: 649. 1906.

Polyporus planus Peck, Ann. Rep. N. Y. State Mus. 31: 37. 1879. Not *P. planus* Wallr. 1833.

Pileus very thin, leathery, somewhat fragile, circular to spatulate or flabelliform, narrowly attached, decurrent at times, 1–3 × 1.5–2.5 × 0.05 cm.; surface finely tomentose when young, becoming glabrous and slightly encrusted, conspicuously multizonate, isabelline to umbrinous with brown or black zones; margin very thin, lobed, often somewhat proliferous: context pallid, membranous; tubes punctiform, white within, often more or less radiately arranged, mouths minute, angular, about 6 to a mm., edges white to slightly yellowish and finally discolored, very thin, easily splitting, denticulate: spores smooth, hyaline.

TYPE LOCALITY: North Greenbush, New York.
HABITAT: Dead branches of deciduous trees.
DISTRIBUTION: Maine, New Hampshire, New York, Iowa, and Missouri.

15. **Coriolus armenicolor** (Berk. & Curt.) Pat. Tax. Hymén. 94. 1900.

Polyporus armenicolor Berk. & Curt. Jour. Linn. Soc. 10: 315. 1868.

Pileus very thin, flexible, flabelliform, attenuate behind, 2–3 × 1.5–3.5 × 0.1 cm., surface multizonate, minutely longitudinally striate, shining, glabrous, radiately plicate, at least when dry, isabelline, with fulvous or pale-bay zones; margin very thin, lobed or incised: context membranous, coarsely fibrous, white, less than 1 mm. thick; tubes less than 0.5 mm. long, white to pallid within, mouths angular, minute, 7–8 to a mm., edges very thin, dentate, white when young, glistening, fulvous in dried specimens: spores smooth, hyaline.

TYPE LOCALITY: Cuba.
HABITAT: Dead wood.
DISTRIBUTION: Cuba and Jamaica.

16. **Coriolus brachypus** (Lév.) Murrill, Bull. Torrey Club 32: 646. 1906.

Polyporus brachypus Lév. Ann. Sci. Nat. III. 5: 127. 1846.
? *Polyporus Feei* Fries, Epicr. Myc. 476. 1838. (Type from Brazil.)
Polyporus albo-cervinus Berk. Jour. Bot. & Kew Misc. 8: 234. 1856. (Type from Brazil.)
? *Polyporus cervino-nitens* Schw.; Berk. & Curt. Jour. Acad. Phila. II. 3: 224. 1856. (Type from Surinam.)
Coriolus albo-cervinus Pat. Tax. Hymén. 94. 1900.

Pileus thin, coriaceous, firm, flexible, imbricate, dimidiate to flabelliform, sessile or attached by a short tubercle, 4–6 × 5–12 × 0.2–0.4 cm.; surface glabrous or nearly so, slightly radiately furrowed, multizonate, pallid to isabelline, usually rose-tinted; margin thin, narrowly sterile, undulate or slightly lobed: context punky-fibrous, pallid, 1–3 mm. thick; tubes pale-roseous within, 2–3 mm. long, very even and regular, mouths slightly angular, 5–6 to a mm., edges thin, slightly dentate, tough, firm, white or rose-tinted when young, becoming avellaneous-roseous at maturity, fading in herbarium specimens: spores smooth, hyaline.

TYPE LOCALITY: Guadeloupe.
HABITAT: Dead wood.
DISTRIBUTION: Tropical America, from Southern Florida to Brazil.
EXSICCATI: Roum. Fungi Sel. *4805*; Thüm. Myc. Univ. *2106*.

17. **Coriolus haedinus** (Berk.) Pat. Tax. Hymén. 94. 1900.

Polyporus haedinus Berk. Jour. Bot. & Kew Misc. **8**: 234. 1856.
Polyporus undigerus Berk. & Curt. Jour. Linn. Soc. **10**: 317. 1868. (Type from Cuba.)

Pileus very thin and very flexible, almost as thin as paper at times, dimidiate to circular, according to its relation to the substratum, applanate or conchate, laterally connate, decurrent, 1–2 × 2–3 × 0.02–0.05 cm.; surface white to slightly yellowish, densely concentrically furrowed, slightly spongy between the furrows, glabrous; margin thin, undulate to lobed, fertile: context white, membranous; tubes short, less than 1 mm. long, mouths angular, nearly regular, 4–5 to a mm., with a tendency to appear much elongated radially by the partial separation of the transverse walls, edges very thin, fimbriate-dentate: spores smooth, hyaline.

TYPE LOCALITY: Brazil.
HABITAT: Dead wood.
DISTRIBUTION: Cuba and Porto Rico; also in Brazil.

18. **Coriolus substipitatus** Murrill, sp. nov.

Pileus flabelliform, attached by a short tubercle, applanate, rather thin, flexible, of very light weight, 4 × 5–7 × 0.2–0.3 cm.; surface milk-white, opaque, glabrous, somewhat uneven, especially behind, faintly zonate in front; margin acute, concolorous, entire to slightly lobed: context thin, soft, punky, milk-white, 1 mm. thick; tubes 1–1.5 mm. long, white within, firm and elastic, glistening, mouths circular to angular, very regular, 6–7 to a mm., edges thin, entire, white, becoming denticulate with age, slightly yellowish in dried specimens: spores globose, smooth, hyaline, 3.5 μ; hyphae 4 μ; cystidia none.

Type collected at Port Antonio, Jamaica, on an old log in woods, *F. S. Earle 629*.
DISTRIBUTION: Known only from the type locality.

19. **Coriolus subectypus** Murrill, sp. nov.

Pileus imbricate, sessile, flabelliform, rather thin, slightly flexible to rigid, 4–7 × 6–10 × 0.2–0.4 cm.; surface smooth, glabrous, white to pallid, tinged with bay at times behind, indistinctly concentrically furrowed, subshining, finely multizonate; margin thin, undulate to lobed, sometimes inflexed when dry: context white, punky, 2–3 mm. thick; tubes about 1 mm. long, white within, mouths glistening, circular to angular, 6 to a mm., edges very thin, denticulate, white, pale-ochraceous in dried specimens, rather firm when young, becoming flaccid and wearing away with age: spores ovoid, smooth, hyaline, scanty, 5–6 × 3–4 μ; hyphae 3 μ, cystidia none.

Type collected in Florida, on dead wood, April, 1885, *E. A. Rau*.
DISTRIBUTION: Known only from the type locality.

20. **Coriolus hondurensis** Murrill, sp. nov.

Pileus very thin, slightly flexible, conchate-reniform, sessile, 7 × 9 × 0.2–0.3 cm.; surface radiate-rugose, glabrous, subshining, white to pale-cinereous, with a few very narrow, slightly darker, concentric lines; margin thin, white, lobed, inflexed on drying: context very thin, white, fibrous, less than 1 mm. thick; tubes 2–3 mm. long, slender, white to pale-isabelline within, mouths minute, angular, regular, glistening, 7–8 to a mm., edges thin, dentate, white to dark-isabelline, fulvous in dried specimens: spores smooth, hyaline.

Type collected near Punta Gorda, British Honduras, on dead wood, 1906, *Morton E. Peck*.
DISTRIBUTION: Known only from the type locality.

21. **Coriolus ochrotinctellus** Murrill, sp. nov.

Pileus subimbricate, dimidiate or flabelliform, applanate or conchate, sessile to substipitate, rigid, more or less brittle, 2–6 × 3–9 × 0.2–0.5 cm.; surface glabrous, smooth, subshining, ochroleucous with ochraceous zones; margin papery-thin, fragile, often incurved, entire or undulate, rarely lobed: context milk-white, fleshy-tough, somewhat friable, 1–3 mm. thick; tubes 1–3 mm. long, slender, white to ochroleucous within, mouths very regular, angular, 4–5 to a mm., edges thin, entire, white to ochraceous or isabelline: spores globose, smooth, hyaline, 3 μ; hyphae 5 μ; cystidia none.

Type collected at Biloxi, Mississippi, September 10, 1904, on a decayed oak, *Esther S. Earle 55*.
DISTRIBUTION: Mississippi; Cuba.

22. **Coriolus Lloydii** Murrill, sp. nov.

Pileus rather thin, laterally connate, rigid, tough, cuneate to flabelliform, applanate, tubercular-sessile, 2–3 × 3–4 × 0.2–0.4 cm.; surface white to isabelline, scabrous, somewhat rugose, marked with a few narrow, indistinct, pale-latericeous zones; margin thin, fertile, irregular, lobed: context punky-fibrous, white, 1.5–2 mm. thick; tubes 1–1.5 mm. long, white within, mouths angular, subglistening, 4 to a mm., edges thin, firm, dentate, white to isabelline: spores globose, smooth, hyaline, 2 μ; hyphae 5 μ.

Type collected in Ohio, on dead wood, *C. G. Lloyd*.
DISTRIBUTION: Known only from the type locality.

23. **Coriolus leiodermus** (Mont.) Murrill.

? *Polystictus actinobolus* Mont. Syll. Crypt. 166. 1856. (Type from Guiana.)
Polyporus leiodermus Mont. Syll. Crypt. 168. 1856.

Pileus thin, tough, leathery, flexible, sessile, dimidiate, often decurrent, conchate, 3–4 × 4–6 × 0.1–0.3 cm.; surface multizonate, slightly silky, becoming glabrous, minutely furrowed radiately, isabelline-fulvous; margin thin, entire, pallid: context white to pallid, punky-fibrous, 0.5–1.5 mm. thick; tubes 1–1.5 mm. long, pallid within, mouths circular to angular, very regular, variable in size, 3–6 to a mm., edges thin, firm, entire to dentate, pallid to umbrinous-fulvous, glistening: spores globose, smooth, hyaline, 3–4 μ; hyphae hyaline, 3.5 μ in diameter.

TYPE LOCALITY: Guiana.
HABITAT: Dead wood.
DISTRIBUTION: Nicaragua; also in Guiana.

24. **Coriolus concentricus** Murrill, sp. nov.

Pileus thin, firm, but slightly flexible, flabelliform, conchate, depressed behind, attached by a narrow base, 4 × 6 × 0.2–0.4 cm.; surface glabrous, indistinctly zonate, subshining, white to pale-isabelline, latericeous behind, the zones tinged with pale-latericeous; margin very thin, lobed, concolorous, glabrous: context white, fibrous, 1 mm. thick; tubes slender, 2–3 mm. long, white within, mouths regular, angular, 3 to a mm., edges thin, firm, denticulate, white to pale-isabelline in dried specimens: spores globose, smooth, hyaline, 3 μ; hyphae 5 μ.

Type collected at London, Ontario, on dead wood, *J. Dearness 700*.
DISTRIBUTION: Known only from the type locality.

25. **Coriolus Drummondii** (Klotzsch) Pat. Tax. Hymén. 94. 1900.

Polyporus Drummondii Klotzsch, Linnaea 8: 487. 1833.

Pileus very thin, slightly flexible, but rather brittle, sessile, laterally connate, somewhat imbricate, spatulate or flabelliform, 1–2 × 1–1.5 × 0.05–0.1 cm.; surface longitudinally fibrose-striate, rough, nearly glabrous, pallid to light-bay, subzonate; margin very thin, fimbriate, irregular: context thin, membranous, white to pallid; tubes very short, less than 1 mm. thick, mouths angular, radially elongate, 3–4 to a mm., pallid to discolored, edges thin, flaccid, dentate to lacerate: spores not examined.

TYPE LOCALITY: New Orleans, Louisiana.
HABITAT: Dead trunks.
DISTRIBUTION: Known only from the type locality.

26. **Coriolus membranaceus** (Sw.) Pat. Tax. Hymén. 94. 1900.

Boletus membranaceus Sw. Prodr. 148. 1788. — Sw. Fl. Ind. Occ. 1922. 1806.
Polyporus membranaceus Fries, Syst. Myc. 1: 370. 1821. — Berk. Ann. Mag. Nat. Hist. **10**: 378. 1843.
Polystictus semiplicatus Ellis & Macbr. Bull. Lab. Nat. Hist. Univ. Iowa 3²: 192. 1896. (Type from Nicaragua.)

Pileus very thin, densely imbricate, sessile, dimidiate or flabelliform, conchate, 2–4 × 3–6 × 0.1–0.2 cm.; surface multizonate, finely radiate-furrowed, short-tomentose to glabrous and subshining, white or pallid with slightly darker zones; margin very thin, undulate or lobed, usually splitting with age: context white, fibrous, 0.5–1.5 mm. thick; tubes very short, less than 1 mm., white to discolored within, mouths angular, 4–6 to a mm.,

edges very thin, denticulate, fimbriate with age, white to isabelline or nearly fulvous in dried specimens: spores globose, smooth, hyaline, 4–5 μ; hyphae 5 μ; cystidia none.

TYPE LOCALITY: Jamaica.
HABITAT: Dead wood.
DISTRIBUTION: West Indies and Central America; also in Colombia.
ILLUSTRATION: Berk. *loc. cit. pl. 10, f. 7.*

27. **Coriolus nigromarginatus** (Schw.) Murrill, Bull. Torrey Club **32**: 649. 1906.

Boletus hirsutus Wulfen, in Jacq. Coll. **2**: 149. 1788. (Type from Carinthia.) Not *Boletus hirsutus* Scop. 1772.
Polyporus hirsutus Fries, Syst. Myc. 1: 367. 1821.
Boletus nigromarginatus Schw. Schr. Nat. Ges. Leipzig 1: 98. 1822.
Polystictus hirtellus Fries, Nov. Symb. 83. 1851. (Type from Mexico.)

Pileus confluent-effused, more or less imbricate, sessile, dimidiate, applanate, corky-leathery, rather thick, flexible or rigid, 3–5 × 5–8 × 0.3–0.8 cm.; surface conspicuously hirsute, isabelline to cinereous, concentrically furrowed and zoned; margin at length thin, often fuliginous, sterile, finely strigose-tomentose, entire or undulate: context white, thin, fibrous, spongy above, 1–4 mm. thick; tubes white, 1–2 mm. long, mouths circular to angular, 4 to a mm., quite regular, edges thin, firm, tough, entire, white to yellowish or umbrinous: spores smooth, hyaline, cylindrical, slightly curved, 2.5–3 μ.

TYPE LOCALITY: North Carolina.
HABITAT: Various forms of dead deciduous wood.
DISTRIBUTION: North America; also in Europe and Asia.
EXSICCATI: Ellis & Ev. Fungi Columb. *204*; Ellis, N. Am. Fungi *311*; Shear, N. Y. Fungi *37*; Thüm. Myc. Univ. *1005*; Rab. Fungi Eur. *2103, 2103b*; Sydow, Myc. Mar. *714*.

28. **Coriolus subchartaceus** Murrill, sp. nov.

Pileus rather thick, imbricate, sessile, dimidiate, conchate, rigid, tough, 3–5 × 5–8 × 0.5–1.5 cm.; surface nearly smooth, finely hirtose-tomentose, avellaneous, indistinctly multizonate; margin cremeous, villose, thin, sterile, becoming black when bruised: context white, radiate-fibrous, zonate, firm, 2–3 mm. thick; tubes rather long, slender, 3–6 mm., white within, mouths circular to angular, rather irregular with age, 2–3 to a mm., edges at first thick, entire, becoming thin and finally lacerate-dentate, white to avellaneous, glistening: spores smooth, ovoid, hyaline, 5 μ; hyphae 6 μ.

Type collected in the La Plata Mountains, Colorado, on *Populus tremuloides*, June 28, 1898, *Baker, Earle & Tracy 186.*
DISTRIBUTION: Wisconsin, Colorado, and Utah.

29. **Coriolus fulvo-umbrinus** Murrill, sp. nov.

Pileus laterally connate, semicampanulate, umbonate-attached, thin, slightly flexible, 2 × 2–3 × 0.1 cm.; broader by confluence; surface strigose-tomentose, multizonate, somewhat radiate-rugose, uneven, latericeous-fulvous, the zones very slightly darker; margin and new growth white to avellaneous, hirsute, zonate, slightly lobed, sometimes proliferous: context thin, membranous, pallid; tubes punctiform, white within, mouths large, hexagonal, irregular, 2–3 to a mm., edges entire to lacerate-dentate, the divisions distinctly spinose, white to umbrinous: spores smooth, hyaline.

Type collected at Havana, Cuba, on old timber near the beach, March 6, 1904, *F. S. Earle 3.*
DISTRIBUTION: Known only from the type locality.

30. **Coriolus pinsitus** (Fries) Pat. Tax. Hymén. 94. 1900.

Polyporus pinsitus Fries, Elench. Fung. 95. 1828.
? *Polyporus gibberulosus* Lév. Ann. Sci. Nat. III. **5**: 139. 1846. (Type from Snrinam.)
Polyporus tener Lév. Ann. Sci. Nat. III. 5: 139. 1846. (Type from Guadeloupe.)
Polystictus umbonatus Fries, Nov. Symb. 87. 1851. (Type from Mexico.)
Hexagona Friesiana Speg. Anal. Soc. Ci. Argent. **17**: 69. 1884. (Type from Paraguay.)
Polystictus jamaicensis P. Henn. Hedwigia **37**: 280. 1898. (Type from Jamaica.)

Pileus thin, flexible, confluent-effused, sessile, dimidiate or flabelliform, often umbonate-affixed, 2–4 × 3–7 × 0.1 cm.; surface isabelline to pale-cinereous, glistening, multizonate, velvety-hirsute; margin thin, undulate to lobed, sterile, inflexed on drying: context white, membranous, tough; tubes short, white to discolored within, less than 1 mm. long, mouths

hexagonal, very regular, 2–3 to a mm., edges thin, denticulate, white to discolored, often becoming fuliginous: spores oblong, globose, smooth, hyaline, 6–7 × 3 μ; hyphae 3–5 μ; cystidia none.

TYPE LOCALITY: Brazil.
HABITAT: Dead wood.
DISTRIBUTION: Southern Florida and Mexico to Brazil.

31. **Coriolus sericeohirsutus** (Klotzsch) Murrill, Bull. Torrey Club **32**: 651. 1906.

Polyporus sericeo-hirsutus Klotzsch, Linnaea 8: 483. 1833.
Hexagonia sericea Fries, Epicr. Myc. 497. 1838.
Polystictus barbatulus Fries, Nov. Symb. 87. 1851.

Pileus very thin, flexible, sessile, effused-confluent, sometimes wholly resupinate, conchate-reflexed, 0–3 × 2–6 × 0.05–0.1 cm.; surface conspicuously silky-villose to strigose-hirsute, multizonate, pale-brown to hoary, with slightly darker zones; margin thin, entire or undulate, dentate or eroded with age: context thin, white, membranous, tough; tubes shallow, 1–1.5 mm. deep, white to slightly discolored within, mouths hexagonal, irregular, very variable in size, 0.3–1 mm. in diameter, edges thin, denticulate to dentate, white to discolored, sometimes becoming umbrinous: spores smooth, hyaline, thin-walled, pointed, 6 × 4 μ.

TYPE LOCALITY: Texas.
HABITAT: Dead trunks and branches of red cedar.
DISTRIBUTION: Virginia to Florida and west to Missouri and Texas.
EXSICCATI: Rab.-Wint. Fungi Eur. *3327*; Rav. Fungi Car. **2**: *19*; Ellis & Ev. N. Am. Fungi *2012*; Rav. Fungi Am. *212*.

32. **Coriolus sublilacinus** Murrill, sp. nov.

Pileus imbricate-confluent, cup-shaped, sessile, 0.5–1 cm. broad, less than 1 mm. thick, surface densely villose-tomentose, scarcely zonate, white to discolored; margin thin, concolorous, inflexed when dry, somewhat undulate: context thin, white, membranous, rather rigid; tubes punctiform, less than 1 mm. long, mouths angular to irregular, large for the size of the pileus, 3–5 to a mm., edges pale-lilac, fading to dull-avellaneous, rather thick, entire: spores smooth, hyaline.

Type collected in Florida, on bark of dead limbs, January, 1897, *C. G. Lloyd 2077*.
DISTRIBUTION: Known only from the type locality.

33. **Coriolus scutatus** Murrill, sp. nov.

Pileus scutate-conchate, fixed at the center, thin, slightly flexible, coriaceous, 5–7 cm. broad, 1–2 mm. thick; surface villose-tomentose, isabelline to dark-purple or black, marked with a few narrow, concentric lines; margin thin, sterile, pallid, entire or undulate, inflexed when dry: context thin, soft-fibrous, less than 1 mm. thick; tubes short, white, less than 1 mm. long, mouths circular, 5 to a mm., edges rather thick, firm, entire, white to discolored, purplish-spotted when bruised: spores ovoid, smooth, hyaline, 3 × 4 μ; hyphae 4 μ; cystidia none.

Type collected in Mexico, on dead wood, in 1891, *C. L. Smith 35*.
DISTRIBUTION: Known only from the type locality.

34. **Coriolus pavonius** (Hook.) Murrill.

Boletus pavonius Hook. in Kunth, Syn. Pl. 1: 10. 1822.
Polystictus cyclodes Fries, Nov. Symb. 90. 1851. (Type from the island of St. John.)
Polyporus arenicolor Berk. & Curt. Jour. Linn. Soc. **10**: 315. 1868. (Type from Cuba.)
Cyclomycetella pavonia Murrill, Bull. Torrey Club **31**: 423. 1904.
Coriolus arenicolor Murrill, Bull. Torrey Club **32**: 652. 1906.

Pileus thin, coriaceous, flexible, sessile, dimidiate, imbricate, conchate, 3–5 × 4–7 × 0.1–0.2 cm.; surface multizonate, strigose-velvety, pallid, becoming pale-cinereous with age; margin thin, white or yellowish, sterile, entire or undulate: context white, fibrous, about 1 mm. thick; tubes punctiform, less than 1 mm. long, white to slightly yellowish within, mouths very regular in normally developed specimens, circular to slightly angular,

4–6 to a mm., edges white to ochraceous, very thin, denticulate: spores globose, smooth, hyaline, 4 μ; hyphae 5 μ; cystidia none.

TYPE LOCALITY: Colombia.
HABITAT: Dead deciduous logs and sticks.
DISTRIBUTION: Colombia to southern Florida.

35. **Coriolus biformis** (Klotzsch) Pat. Tax. Hymén. 94. 1900.

? *Boletus cervinus* Schw. Schr. Nat. Ges. Leipzig 1: 96. 1822. (Type from North Carolina.)
Polyporus biformis Klotzsch, Linnaea 8: 486. 1833.
Polyporus molliusculus Berk. Lond. Jour. Bot. 6: 320. 1847. (Type from Ohio.)
Polyporus carolinensis Berk. Jour. Bot. & Kew Misc. 1: 102. 1849. (Type from South Carolina.)
Polyporus chartaceus Berk. Jour. Bot. & Kew Misc. 1: 103. 1849.—Grevillea 1: 53. 1872. (Type from North Carolina.)
Polyporus scarrosus B. & C. Grevillea 1: 52. 1872. (Type from North Carolina.)

Pileus effused-reflexed, imbricate, laterally connate, the reflexed portion dimidiate, conchate, 2–5 $\times$ 5–12 $\times$ 0.3–0.7 cm.; surface white, obscurely zonate, nearly smooth, somewhat silky, fibrillose-tomentose; margin acute or obtuse, undulate to lobed: context soft-corky, white, 1–2 mm. thick; tubes 3–5 mm. long, white to discolored within, mouths large and irregular, variable in size, averaging 2 to a mm., edges thin, lacerate-dentate, white to discolored or light-bay: spores oblong, slightly curved, smooth, hyaline, 7–9 $\times$ 2.5–3 μ; hyphae 4 μ; cystidia nonie.

TYPE LOCALITY: Boreal North America.
HABITAT: Dead deciduous wood of various kinds.
DISTRIBUTION: Canada to Florida and west to Iowa and Kansas.
EXSICCATI: Rab.-Wint. Fungi Eur. *3428;* Thüm. Myc. Mar. *2005;* Rav. Fungi Car. **2**: *18;* Ellis & Ev. N. Am. Fungi *1596*, *1703;* Rav. Fungi Am. *714.*

36. **Coriolus maximus** (Mont.) Murrill, Bull. Torrey Club **34**: 467. 1907.

Irpex maximus Mont. Ann. Sci. Nat. II. 8: 364. 1837. — Syll. Crypt. 174. 1856.
Polyporus labyrinthicus Mont. Pl. Cell. Cuba 406. 1842. Not *P. labyrinthicus* Schw.; Fries, Elench. Fung. 83. 1828. (Type from Cuba.)
Polyporus Meyenii Klotzsch, Nova Acta Acad. Leop.-Carol. 19: Suppl. 236. 1843. (Type from Manila.)
Trametes obstinatus Cooke, Grevillea **12**: 17. 1883. (Type from Australia.)

Pileus very large, flexible or rigid, leathery, sessile, dimidiate, imbricate, 5–12 $\times$ 10–20 $\times$ 0.2–0.5 cm.; surface conspicuously villose-tomentose to partially glabrous, concentrically furrowed, white or cremeous, becoming hoary; margin thin, entire to lobed: context soft and spongy above, tough and fibrous below, white, 1–3 mm. thick; tubes 1–2 mm. long, white to cremeous within, soon becoming irpiciform, mouths circular when very young, 3–4 to a mm., edges white to ochraceous, firm, fimbriate-dentate, soon splitting into sharp teeth: spores smooth, hyaline.

TYPE LOCALITY: Cuba.
HABITAT: Dead wood.
DISTRIBUTION: West Indies and Central America; also in Old World tropics.

37. **Coriolus sobrius** (Berk. & Curt.) Murrill, Bull. Torrey Club **32**: 649. 1906.

Polyporus sobrius Berk & Curt. Jour. Linn. Soc. **10**: 316. 1868.

Pileus very thin, small, flabelliform, imbricate, 1.5 $\times$ 1 $\times$ 0.1 cm.; surface very smooth, glabrous, subzonate, isabelline to pale-chestnut, variegated; margin very thin, entire: context membranous, white, less than 0.5 mm. thick; tubes nearly 1 mm. in length, shorter near the margin, soon becoming irpiciform, mouths rather large for the size of the pileus, irregular, radially elongate, angular, 2–4 to a mm., edges white to discolored, entire to lacerate: spores not examined.

TYPE LOCALITY: Cuba.
HABITAT: Dead wood.
DISTRIBUTION: Known only from the type locality.

38. **Coriolus cyphelloides** (Fries) Murrill.

Polystictus cyphelloides Fries, Nov. Symb. 88. 1851.

Pileus minute, erumpent through the cortex, thin, coriaceous, pendulous, subcampanulate to unguliform, attenuate behind, 0.6 $\times$ 1 $\times$ 0.2–0.3 cm.; surface finely tomentose to

nearly glabrous, silky-shining, finely zonate near the margin, which is thin, fertile, concolorous: context white, fibrous, less than 0.5 mm. thick; tubes rather long, 1.5–2 mm., white within, large and irregular, soon becoming irpiciform, mouths 2–3 to a mm., edges white or pallid, thin, dentate to lacerate: spores not examined.

TYPE LOCALITY: Mexico.
HABITAT: Dead wood.
DISTRIBUTION: Known only from the type locality.

39. **Coriolus abietinus** (Dicks.) Quél. Ench. Fung. 175. 1886.

Boletus abietinus Dicks. Pl. Crypt. Brit. **3**: 21. 1793.
Boletus incarnatus Schum. Enum. Pl. Saell. **2**: 391. 1803.
Polyporus parvulus Schw. Trans. Am. Phil. Soc. II. **4**: 157. 1832. (Type from Pennsylvania.)
? *Polyporus pargamenus* Fries, Epicr. Myc. 480. 1838. (Type from arctic North America.)
Polystictus pusio Sacc. & Cub. in Sacc. Syll. Fung. **6**: 265. 1888.

Pileus effused-reflexed, the reflexed portion thin, tough, flexible to nearly rigid, 0.5–1.5 × 1–3 × 0.05–0.1 cm.; surface obsoletely zonate, grayish-white, villose; margin thin, undulate to lobed, fimbriate with age, incurved on drying: context very thin, white, membranous; tubes uneven, irregular, soon becoming irpiciform, mouths variable in size, 2–3 to a mm., edges thin, lacerate-dentate, unequal, pallid or violet, fading with age, somewhat flesh-tinted in dried specimens: spores globose, smooth, hyaline, 4.5–5.5 μ; hyphae 7 μ; cystidia none.

TYPE LOCALITY: England.
HABITAT: Decaying coniferous trunks.
DISTRIBUTION: Northern hemisphere.
ILLUSTRATION: Dicks. *loc. cit. pl. 9, f. 9.*
EXSICCATI: Shear, N. Y. Fungi *307;* Thüm. Fungi Austr. *6, 706;* Ellis, N. Am. Fungi *8;* Karst. Finl. Fungi *121, 248;* Rav. Fungi Car. **1**: *12;* Rab.-Wint. Fungi Eur. *2637, 3235;* Sydow, Myc. Mar. *713, 3114;* Krieger, Fungi Sax. *65, 1205;* Ellis & Ev. Fungi Columb. *303;* Underw. & Cook, Illust. Fungi *16;* Rav. Fungi Am. *422;* Jacz. Fungi Rossiae *234;* Sacc. Myc. Ven. *1409;* Allesch. & Schn. Fungi Bavar. *135;* Linhart, Fungi Hung. *445.*

40. **Coriolus prolificans** (Fries) Murrill.

Polyporus prolificans Fries, Epicr. Myc. 443. 1838.
Polyporus laceratus Berk. Ann. Mag. Nat. Hist. **3**: 392. 1839. (Type from Louisiana.)
Polyporus Flabellum Mont. Pl. Cell. Cuba 388. *pl. 15. f. 2.* 1842. (Type from Cuba.)
Polyporus Menandianus Mont. Ann. Sci. Nat. II. **20**: 362. 1843. (Type from New York.)
Polyporus subflavus Lév. Ann. Sci. Nat. III. **5**: 300. 1846. (Type from New York.)
Polyporus xalapensis Berk. Jour. Bot. & Kew Misc. **1**: 103. 1849. (Type from Mexico.)
Polyporus Sartwellii Berk. & Curt. Grevillea **1**: 51. 1872. (Type from New York.)
Polyporus ilicincola Berk. & Curt. Grevillea **1**: 52. 1872. (Type from Alabama.)
Polyporus pseudopargamenus Thüm. Myc. Univ. *no. 1102.* 1878. (Type from New York.)

Pileus exceedingly variable, sessile or affixed by a short tubercle, dimidiate to flabelliform, broadly or narrowly attached, 2–5 × 2–6 × 0.1–0.3 cm.; surface finely villose-tomentose, smooth, white or slightly yellowish, marked with a few narrow indistinct latericeous or bay zones; margin thin, sterile, entire to lobed: context very thin, white, fibrous; tubes 1–3 mm. long, white to discolored within, mouths angular, somewhat irregular, 3–4 to a mm., usually becoming irpiciform at an early stage, edges acute, dentate, becoming lacerate, white to yellowish or umbrinous: spores smooth, hyaline.

TYPE LOCALITY: Mexico.
HABITAT: Dead deciduous trunks.
DISTRIBUTION: Canada to Florida and west to Wisconsin and Mexico; also in Europe.
EXSICCATI: Ellis, N. Am. Fungi *312;* Shear, N. Y. Fungi *38;* Rab.-Wint. Fungi Eur. *3331;* Thüm. Myc. Univ. *1102, 1304;* Ellis & Ev. N. Am. Fungi *1934;* Rav. Fungi Am. *108, 423;* Ellis & Ev. Fungi Columb. *302;* Rav. Fungi Car. **1**: *13.*

DOUBTFUL SPECIES

Boletus cinerascens Schw. Schr. Nat. Ges. Leipzig **1**: 99. 1822. Described from North Carolina. Type not found. Apparently near *Coriolus sericeohirsutus.*

Sistotrema Symphyton Schw. Schr. Nat. Ges. Leipzig **1**: 101. 1822. Described from North Carolina. Apparently near *C. biformis.*

Polyporus papyraceus Fries, Elench. Fung. 97. 1828. Described from plants collected by Bertero on trunks in Porto Rico. Type not found. Apparently near *C. membranaceus.*

Polyporus decipiens Schw. Trans. Am. Phil. Soc. II. **4**: 157. 1832. *Coriolus decipiens*

Pat. Tax. Hymén. 94. 1900. Described from collections made at Bethlehem, Pennsylvania, presumably by Schweinitz himself. Authentic specimens have not been found. Those bearing this name may usually be referred to *C. versicolor* or *C. hirsutulus*, but the description calls for a plant near *C. prolificans*.

Irpex epiphylla Schw. Trans. Am. Phil. Soc. II. 4 : 164. 1832. Described from Bethlehem, Pennsylvania. According to Berkeley and Curtis this species is not distinct from *C. biformis*.

Polyporus arcticus Fries, Epicr. Myc. 479. 1838. Described from specimens collected by Wormskiold in Kamtschatka. Type not found, but evidently near *C. nigromarginatus* or *C. abietinus*.

Polystictus nuceus Fries. Nov. Symb. 81. 1851. Described from plants collected on decayed trunks in Costa Rica, by Oersted. Type not found. Probably near *C. sector*.

Polystictus corrugis Fries, Nov. Symb. 82. 1851. Collected by Benzon in the West Indies. Type not found. Apparently not far from *C. sector*.

Polystictus plumbosus Fries, Nov. Symb. 93. 1851. Described from Liebmann's collections in Mexico. Type not found. Apparently related to *C. sector*.

Polyporus Richardsonii Berk. & Curt. Jour. Acad. Phila. II. 3 : 224. 1856. Described from Richardson's collection in boreal North America. Apparently near *C. pubescens*.

Polystictus placentaeformis Cooke, Grevillea 15 : 24. 1886. Described from plants collected on dead poplar limbs at Carlton, British North America, in 1858. The small type specimens are quite well preserved at Kew. They resemble forms of *C. nigromarginatus* or *C. pubescens*, growing on the under side of a limb, but the pores are much too large for the former and the surface is too hirsute for the latter.

24. **CORIOLELLUS** Murrill, Bull. Torrey Club 32 : 481. 1905.

Hymenophore small, dry, annual, epixylous, semi-resupinate; surface anoderm, usually azonate: context white, thin, fibrous to corky; hymenium concolorous; tubes thin-walled, usually rather large and irregular, dentate, but not irpiciform: spores smooth, hyaline.

Type species, *Trametes Sepium* Berk.

Pileus white or pale-isabelline.	
Surface finely tomentose to glabrous; context firm.	1. *C. Sepium*.
Surface conspicuously villose to strigose; context very soft and spongy.	2. *C. cuneatus*.
Pileus cinereous-fuscous, glabrous.	3. *C. Sequoiae*.
Pileus fulvous to latericeous, finely tomentose to finely strigose.	4. *C. serialis*.

1. **Coriolellus Sepium** (Berk.) Murrill, Bull. Torrey Club 32 : 481. 1905.

Trametes Sepium Berk. Lond. Jour. Bot. 6 : 322. 1847.

Pileus small, dimidiate, sessile, laterally connate, narrowly attached when young, becoming decurrent and often effused, 0.5–1 × 1–3.5 × 0.2–0.5 cm.; surface white or pale wood-colored, finely tomentose to glabrous, subzonate, smooth or broadly radiately furrowed; margin thin or tumid, entire to undulate: context white, 1–2 mm. thick, soft-corky; tubes white, 2–3 mm. long, mouths angular, uneven, irregular, sometimes slightly sinuous, 1–2 to a mm., edges thin, undulate to dentate, white: spores oblong, smooth, hyaline, 12 × 5 μ; hyphae hyaline, 3–5 μ.

TYPE LOCALITY: On dry fence-rails in Ohio.
HABITAT: Structural timber and other dead wood, especially that of deciduous trees.
DISTRIBUTION: Temperate North America.
EXSICCATI: Thüm. Myc. Univ. *1306*; Ellis, N. Am. Fungi *11*; Rav. Fungi Am. *216*; Rav. Fungi Car. 1 : *21*.

2. **Coriolellus cuneatus** Murrill, sp. nov.

Pileus thin, soft, flexible, cuneate to dimidiate, imbricate, often effused, 0.5–1.5 × 1.5–3 × 0.2–0.4 cm.; surface conspicuously villose, strigose behind, azonate or subzonate, white to isabelline; margin thin, tomentose: context white to pale-yellowish, soft and fibrose-spongy, 1–3 mm. thick; tubes short, white to discolored, variable, 1 mm. or less in length, mouths angular to irregular, 1–3 to a mm., edges thin, soft, dentate-lacerate, split-

ting into sharp teeth, which wear away with age: spores globose, smooth, hyaline, 3–5 μ; hyphae hyaline, 3.5 μ.

Type collected in British Columbia, on the bark of "giant cedar," August, 1887, *John Macoun 60*.
DISTRIBUTION: Known only from the type locality.

3. **Coriolellus Sequoiae** (Copeland) Murrill.

Trametes Sequoiae Copeland, Ann. Myc. 2: 507. 1904.

Pileus spongy to corky, rather soft, very variable in shape, effused, confluent, resupinate or narrowly reflexed, imbricate, the reflexed portion glabrous, cinereous-fuscous: context very thin, fuscous; tubes slender, cinereous, 5–7 mm. long, mouths subcircular to angular, cinereous-umbrinous, edges thin, entire to dentate: spores not examined.

TYPE LOCALITY: Woodside, California.
HABITAT: On burnt wood of *Sequoia sempervirens*.
DISTRIBUTION: Known only from the type locality.

4. **Coriolellus serialis** (Fries) Murrill.

Polyporus serialis Fries, Syst. Myc. 1: 370. 1821.
Polyporus scalaris Pers. Myc. Eur. 2: 90. 1825. (Type from Switzerland.)
Trametes serialis Fries, Hymen. Eur. ed. 2. 585. 1874.
Polyporus variiformis Peck, Ann. Rep. N. Y. State Mus. 42: 26. 1889. (Type from New York.)

Pileus corky to woody, extensively effused, resupinate or shortly reflexed, seriately elongate, laterally connate, the reflexed portion very narrow, 0–1 × 1–1.5 × 0.3–0.5 cm.; surface uneven, subzonate, appressed-tomentose to strigose, hoary-fulvous to latericeous-fulvous; margin thick, pallid, undulate to very uneven: context white, fibrous, membranous, less than 1 mm. thick; tubes slender, white, very variable in size and shape, 2–8 mm. long, mouths circular to angular or irregular, pure white, becoming pale yellowish-brown at times on drying, about 3 to a mm., edges rather thick, firm, entire, becoming thinner and dentate: spores smooth, oblong, hyaline, 6–8 × 2.5–3 μ.

TYPE LOCALITY: Sweden.
HABITAT: On dead coniferous and deciduous wood.
DISTRIBUTION: Northern hemisphere.
ILLUSTRATION: Fries, Ic. Hymen. *pl. 191, f. 2.*

DOUBTFUL SPECIES

Polyporus perpusillus Pers.; Lév. Ann. Sci. Nat. III. 2: 191. 1844. *Fomes perpusillus* Cooke, Grevillea 14: 19. 1885. The specimen originally described by Persoon is at Leiden, but it does not give a definite clue to the identity of this species. Léveillé probably had specimens of *Trametes ohiensis* Berk., which he took for *P. perpusillus*.

25. **SPONGIPORUS** Murrill, Bull. Torrey Club 32: 474. 1905.

Hymenophore small, annual, epixylous, sessile, dimidiate, pulvinate; surface white, anoderm to subpelliculose, azonate, soft and elastic: context white, extremely soft and spongy throughout; hymenium rigid, somewhat discolored; tubes large, irregular, thin-walled, lacerate: spores smooth, hyaline.

Type species, *Polyporus leucospongia* Cooke & Hark.

Pileus 6–10 cm. broad, surface tomentose to glabrous. 1. *S. leucospongia.*
Pileus 1.5–3 cm. broad, surface villose. 2. *S. altocedronensis.*

1. **Spongiporus leucospongia** (Cooke & Hark.) Murrill, Bull. Torrey Club 32: 474. 1905.

Polyporus leucospongia Cooke & Hark. Grevillea 11: 106. 1883.

Pileus rather small, sessile, dimidiate, conchate, pulverulent, 2–3 × 6–10 × 1.5–2.5 cm.; surface white, anoderm, very soft and spongy, finely tomentose to glabrous; margin rounded, inflexed, sterile, concolorous: context white, extremely soft and spongy, slightly firmer next to the tubes with age, 5–20 mm. thick; tubes large, irregular, 2–4 mm. long, white to discolored and slightly resinous in appearance, mouths angular, irregular, about 2 to a mm., edges thin, entire to lacerate-dentate: spores smooth, ellipsoidal, hyaline, 7 × 5 μ.

TYPE LOCALITY: On pine and spruce logs in the Sierra Nevada mountains, 2400 meters, California.
HABITAT: Dead coniferous logs projecting from the snow.
DISTRIBUTION: Colorado, Wyoming, and California.
EXSICCATI: Ellis & Ev. N. Am. Fungi *1104;* Rab.-Wint. Fungi Eur. *3432*.

2. **Spongiporus altocedronensis** Murrill, sp. nov.

Pileus very soft and spongy, broadly attached, decurrent, subimbricate, 0.5–1 × 1.5–3 × 0.5–1 cm.; surface white, azonate, smooth, villose; margin thick, broadly sterile: context white, very soft and spongy, radiate-fibrous, a few fibers being darker and firmer, 3–8 mm. thick; tubes shallow, ample, white to pale reddish-brown, about 1 mm. in length, 1–2 to a mm., mouths quite irregular, angular, edges thin, uneven, dentate: spores globose, smooth, hyaline, 4–4.5 μ; hyphae 3–4 μ.

Type collected on rotten wood at Alto Cedro, Cuba, March, 1903, *L. M. Underwood & F. S. Earle 1479*.
DISTRIBUTION: Known only from the type locality.

26. **TOMOPHAGUS** Murrill, Torreya **5**: 197. 1905.

Dendrophagus Murrill, Bull. Torrey Club **32**: 473. 1905. Not *Dendrophagus* Toumey, Bull. Ariz. Exp. Sta. **33**: 55. 1900.

Hymenophore very large, but of light weight, annual, epixylous, sessile, dimidiate, thick and pulvinate; surface pelliculose, glabrous, azonate, margin very obtuse: context very thick, soft and spongy throughout; tubes small, dark-colored, thin-walled, fragile: spores smooth, hyaline.

Type species, *Polyporus Colossus* Fries.

1. **Tomophagus Colossus** (Fries) Murrill, Torreya **5**: 197. 1905.

Polyporus Colossus Fries, Nov. Symb. 56. 1851.
Dendrophagus Colossus Murrill, Bull. Torrey Club **32**: 473. 1905.

Pileus of immense size, but of very light weight, dimidiate to reniform, sessile, convex above, 10–20 × 15–30 × 7–10 cm.; surface azonate, glabrous, smooth, pale-yellowish, at length covered with a very thin cuticle, which becomes cracked, wrinkled and pallid with age; margin very obtuse, rounded, concolorous: context very soft and spongy, homogeneous, concentrically zonate, several centimeters thick; tubes minute, soft, white to discolored within, 2–5 mm. long, mouths angular, 3–4 to a mm., edges thin, dentate, white to discolored, umbrinous or fuliginous in herbarium specimens: spores globose, smooth, hyaline, 5–7 μ; hyphae 6 μ.

TYPE LOCALITY: On *Cedrela odorata* at Puntarena, Costa Rica.
HABITAT: Stumps of *Cedrela odorata*.
DISTRIBUTION: Yucatan and Costa Rica, and doubtfully reported from the island of St. John.

27. **TYROMYCES** Karst. Rev. Myc. 3^9: 17. 1881.

Leptoporus Quél. Ench. Fung. 175. 1886. Not *Leptopora* Raf. 1809.
Oligoporus Bref. Unters. Gesammt. Myk. 8: 114. 1889.

Hymenophore annual, epixylous, sessile, anoderm, azonate, glabrous or nearly so: context white, fibrous, fleshy to fleshy-tough, rigid and friable when dry; tubes thin-walled, white or yellowish, mouths polygonal: spores smooth, hyaline.

Type species, *Polyporus chioneus* Fries.

Pileus large, 8 cm. or more in diameter.
  Tubes less than 5 cm. long.
    Surface of pileus marked with rounded depressed spots. 1. *T. guttulatus*.
    Surface of pileus not guttulate.
      Pileus over 1 cm. thick. 2. *T. palustris*.
      Pileus 3–5 mm. thick.
        Tubes firm, entire. 3. *T. Palmarum*.
        Tubes fragile, lacerate. 4. *T. obductus*.
Tubes more than 5 cm. long.
  Surface of pileus very smooth.
    Pileus white or slightly yellowish, unchanging; tubes small, entire.
      Spores globose. 5. *T. Calkinsii*.
      Spores ellipsoidal. 6. *T. nivosellus*.
    Pileus becoming dark sordid-bay throughout on drying; tubes 3 to a mm., lacerate. 7. *T. Smallii*.

- Surface of pileus not very smooth.
  - Surface sodden, rough, white, becoming blackish, especially at the margin. — 8. *T. Spragueï.*
  - Surface tuberculose, ochraceous, not becoming blackish. — 9. *T. tiliophila.*
- Pileus small, rarely exceeding 5 cm. in diameter.
  - Pileus resinous or cartilaginous in appearance.
    - Tubes sharply and deeply lacerate. — 10. *T. cerifluus.*
    - Tubes not as above.
      - Pileus 3–4 cm. broad; tubes 6 to a mm. — 11. *T. versicutis.*
      - Pileus 1 cm. broad; tubes 4 to a mm. — 12. *T. semisupinus.*
  - Pileus neither resinous nor cartilaginous.
    - Tubes large, irregular, lacerate, 1–2 to a mm. — 13. *T. undosus.*
    - Tubes much smaller, usually regular and entire.
      - Species confined to temperate regions.
        - Surface zonate.
          - Pileus 1–3 mm. thick, not effused. — 14. *T. crispellus.*
          - Pileus 5 mm. or more thick, effused-reflexed. — 15. *T. Ellisianus.*
        - Surface azonate.
          - Surface conspicuously villose or tomentose.
            - Pileus more or less bluish, not effused. — 16. *T. caesius.*
            - Pileus not bluish, effused-reflexed. — 17. *T. semipileatus.*
          - Surface glabrous or nearly so.
            - Surface pelliculose, more or less tinged with gray. — 18. *T. chioneus.*
            - Surface white, without a pellicle.
              - Pileus about 2 mm. thick. — 19. *T. Bartholomaei.*
              - Pileus much thicker.
                - Edges of tubes obtuse, entire. — 20. *T. anceps.*
                - Edges of tubes very thin, lacerate. — 21. *T. lacteus.*
      - Species confined to tropical regions.
        - Pileus milk-white, unchanging, very soft and very friable. — 22. *T. leucomallus.*
        - Pileus somewhat brownish, not very friable.
          - Tubes 3–4 mm. long, much longer than the thickness of the very thin context. — 23. *T. albogilvus.*
          - Tubes short, about equal to the thickness of the context.
            - Hymenium subfulvous; spores ovoid, 3–4 μ. — 24. *T. fulvitinctus.*
            - Hymenium white to pallid; spores cylindrical, 4 × 1 μ. — 25. *T. duracinus.*

1. **Tyromyces guttulatus** (Peck) Murrill.

Polyporus maculatus Peck, Ann. Rep. N. Y. State Mus. **26**: 69. 1874. Not *P. maculatus* Berk. 1848.

Polyporus guttulatus Peck, in Sacc. Syll. **6**: 106. 1888.

Pileus cespitose or gregarious, broad, applanate, sessile or attached by an attenuate base, cheesy-soft when fresh, rigid and fragile when dry, 5–7 × 10–15 × 0.5–1.5 cm.; surface white or yellowish-white, becoming sordid with age, especially at the margin, glabrous, somewhat uneven, slightly zonate at times, marked with numerous rounded, depressed, watery spots, either scattered promiscuously or arranged in zones; margin thin, white to discolored, undulate or lobed: context white, cheesy to fragile, 3–8 mm. thick; tubes white, 3–6 mm. long, mouths small, angular, glistening, 4–5 to a mm., white to avellaneous or umbrinous, often sordid-spotted in dried specimens, edges thin, fragile, lacerate: spores globose, smooth, hyaline, 5 μ; hyphae 6 μ; cystidia none.

TYPE LOCALITY: Worcester, New York.
HABITAT: Fallen coniferous trunks in woods.
DISTRIBUTION: Eastern Canada to Ohio.

2. **Tyromyces palustris** (Berk. & Curt.) Murrill.

Polyporus palustris Berk. & Curt. Grevillea **1**: 51. 1872.

Pileus sessile, dimidiate, convex above, plane or concave below, much thicker behind, subimbricate, fleshy-tough to rigid and somewhat friable when dry, 4–6 × 8–10 × 1–3 cm.; surface smooth, glabrous, white to slightly yellowish, sometimes rough and tubercular behind; margin thin or thick, entire or undulate, white, becoming slightly discolored: context 1–2 cm. thick, white, fleshy-fibrous when fresh, becoming firm and somewhat friable when dry; tubes 2–5 mm. long, white to slightly yellowish within, about 4 to a mm., edges thin, white to yellowish, entire to dentate: spores smooth, hyaline.

TYPE LOCALITY: South Carolina.
HABITAT: Trunks of *Pinus palustris* and certain other species of southern pines.
DISTRIBUTION: Georgia, South Carolina, and Florida; Bahamas; Cuba.

3. **Tyromyces Palmarum** Murrill, sp. nov.

Pileus very broad, thin, applanate, sessile, dimidiate, concave below, incurved on drying, fleshy-tough to rigid, 6–10 × 10–20 × 0.5–0.8 cm.; surface glabrous, nearly smooth, slightly rugose or tubercular, white to cremeous; margin thin, undulate to lobed, fertile, concolorous: context white, fleshy-fibrous to rigid and somewhat fragile on drying, 3–5 mm. thick; tubes 2–4 mm. long, white to yellowish within, mouths glistening, angular, regular, 3 to a mm., white to slightly yellowish and finally avellaneous, edges thin, entire: spores globose, smooth, hyaline, 3 μ; hyphae 5 μ; cystidia none.

Type collected at the base of El Yunque, Cuba, on a royal palm log, March, 1903, *L. M. Underwood & F. S. Earle 1142.*

DISTRIBUTION: Cuba and Jamaica.

4. **Tyromyces obductus** (Berk.) Murrill.

Polyporus obductus Berk. Lond. Jour. Bot. 4: 304. 1845.

Pileus thin, sessile, fleshy, very fragile when dry, expanding from a wedge-shaped base, 6 × 12 × 0.3 cm.; surface very smooth, yellowish-brown, glabrous, with a gelatinous-horny pellicle, having the appearance of parchment; margin thin, concolorous, reniform-lobed: context very thin, white, fleshy-tough, becoming fragile and very hard when dry, 1 mm. or less thick; tubes slender, 1.5–2.5 mm. long, white to yellowish within, collapsing, mouths angular, white to yellowish, minute, 6 to a mm., edges very thin, flaccid, lacerate: spores smooth, hyaline.

TYPE LOCALITY: Boreal North America, below latitude 54°.
HABITAT: Dead trunks.
DISTRIBUTION: Known only from the type locality.

5. **Tyromyces Calkinsii** Murrill, sp. nov.

Pileus sessile, somewhat imbricate, dimidiate, convex above, concave below, cheesy when fresh, rigid when dry, 3–5 × 6–8 × 1.5–2 cm.; surface smooth, glabrous, azonate, white to cremeous or ochraceous-fulvous; margin thin or thick, entire or undulate, easily bruised, fertile: context white, homogeneous, fleshy to somewhat friable, very firm, 5–10 mm. thick; tubes slender, white to ochraceous within, equaling the thickness of the context, mouths regular, angular, 3–4 to a mm., firm, white to yellowish and finally avellaneous, edges thin, entire to slightly dentate: spores globose, smooth, hyaline, 5 μ; hyphae 7 μ; cystidia none.

Type collected in Florida, on dead wood, December, 1886, *W. W. Calkins 619.*
DISTRIBUTION: Florida.

6. **Tyromyces nivosellus** Murrill, sp. nov.

Pileus simple, imbricate, sessile, dimidiate, semicampanulate to ungulate, very thick behind, convex above, concave below, 3–5 × 6–9 × 2–4 cm.; surface smooth, glabrous, azonate, white or very slightly yellowish; margin thick, usually obtuse, entire or undulate, concolorous, darker when dry: context fleshy-tough, rigid, but slightly friable when dry, milk-white, 0.5–2.5 cm. thick; tubes long and slender, about 1 cm., white to dull-yellowish within, mouths regular, angular, 3 to a mm., white to isabelline or umbrinous, edges firm, rather thin, entire: spores ellipsoidal, smooth, hyaline, 3.5 × 6 μ.

Type collected at the base of El Yunque, Cuba, on a royal palm trunk, March, 1903, *L. M. Underwood & F. S. Earle 1114.*
DISTRIBUTION: Cuba and Porto Rico.

7. **Tyromyces Smallii** Murrill, sp. nov.

Pileus compressed-ungulate, with a large umbo, broadly sessile, dimidiate, fleshy-tough, difficult to dry, 5–7 × 6–10 × 2–5 cm.; surface very smooth, glabrous, azonate, white to cremeous, changing to sordid-bay or blackish on drying: context fleshy-tough, zonate, watery, moist and flexible even in dried specimens, dull-white to sordid-avellaneous, tinged with flesh-color, 0.5–2.5 cm. thick; tubes 5–8 mm. long, 3 to a mm., rather large and irregular at times from the splitting of the dissepiments, partially collapsed, somewhat

fragile, dark-bay throughout in dried specimens, edges thin, lacerate, fimbriate: spores smooth, hyaline.

Type collected near Cutler Point, Florida, on pine trunks, November 13, 1903, *J. K. Small & J. J. Carter 1327*.

DISTRIBUTION: Florida and Louisiana.

8. **Tyromyces Spraguei** (Berk. & Curt.) Murrill.

Polyporus Spraguei Berk. & Curt. Grevillea 1: 50. 1872.
Polyporus sordidus Cooke, Grevillea 15: 20. 1886. (Type from the eastern United States.)

Pileus subimbricate, dimidiate or flabelliform, broadly sessile or attenuate behind, convex, fleshy-tough and watery to rigid and fragile when dry, 4–7 × 5–10 × 1–2 cm.; surface at first milk-white, finely tomentose to glabrous, slightly tuberculose, azonate, sodden, containing depressions filled with exuded water, becoming discolored and roughened and often decaying, especially in damp weather, with a strong and disagreeable odor; margin undulate or slightly lobed, acute, usually discolored, sometimes smoky-black, inflexed when dry: context white, zonate, cheesy when fresh, rigid and somewhat fragile when dry; tubes small, white to yellowish within, 3–8 mm. long, mouths somewhat uneven, angular, 3–4 to a mm., edges white to yellowish, thin, entire: spores ellipsoidal, smooth, hyaline, 6 × 4 μ.

TYPE LOCALITY: New England.
HABITAT; Dead stumps or trunks of chestnut and oak.
DISTRIBUTION: New Hampshire to North Carolina and west to Missouri and Iowa.

9. **Tyromyces tiliophila** Murrill, sp. nov.

Pileus large, convex above, concave below, cheesy when fresh, firm and fragile when dry, attached by an attenuate base, dimidiate to flabelliform, 8 × 12 × 1–1.5 cm.; surface radiate-rugose, slightly plicate, tubercular, subglabrous, white to ochraceous, marked with pale-latericeous; margin thick, fertile, concolorous, undulate: context homogeneous, white, cheesy to fragile, about 1 cm. thick; tubes nearly 1 cm. long, white to slightly yellowish, very fragile when dry, collapsing and wearing away with age, mouths minute, 5 to a mm., subcircular, white to cremeous, slightly discolored with age, edges thin, friable, fimbriate-dentate.

Type collected at Ottawa, Canada, on *Tilia americana*, October, 1883, *J. Macoun*.
DISTRIBUTION: Known only from the type locality.

10. **Tyromyces cerifluus** (Berk. & Curt.) Murrill.

Polyporus cerifluus (Berk. & Curt.) Grevillea 1: 50. 1872.

Pileus sessile, dimidiate, narrowly attached, laterally confluent, fleshy-tough to rigid, thin, 1.5–2.5 × 2–5 × 0.2–0.4 cm.; surface white to ochraceous, latericeous and polished in spots, radiate-rugose, sulcate, resinous-guttate, floccose-tomentose; margin thin, inflexed, undulate, easily bruised: context very thin, white, fibrous, fragile when dry, less than 1 mm. thick; hymenium uneven, cribrose, especially behind; tubes slender, white to discolored, 2–3 mm. long, mouths angular, 4 to a mm., white to yellowish-discolored, edges thin, fimbriate-dentate to sharply lacerate, presenting to the unaided eye the appearance of a *Hydnum:* spores smooth, hyaline, globose, 4 μ; hyphae 5 μ; cystidia none.

TYPE LOCALITY: South Carolina.
HABITAT: Rotten logs in swamps.
DISTRIBUTION: South Carolina.

11. **Tyromyces versicutis** (Berk. & Curt.) Murrill.

Polyporus versicutis Berk. & Curt. Jour. Linn. Soc. 10: 308. 1868.

Pileus cespitose-imbricate, fleshy-tough, rigid when dry, sessile, dimidiate, decurrent behind, 0.5–1.5 × 3–4 × 0.2–0.4 cm.; surface rugose or tuberculose, finely tomentose, resinous-guttate, ochraceous to latericeous when dry; margin somewhat obtuse, sterile: context fleshy to rigid, pallid, 2 mm. thick; tubes 1–2 mm. long, pallid to umbrinous, mouths circular to slightly angular, minute, 6 to a mm., edges thin, subentire, pallid to umbrinous: spores not examined.

TYPE LOCALITY: Cuba.
HABITAT: Dead wood.
DISTRIBUTION: Known only from the type locality.

12. **Tyromyces semisupinus** (Berk. & Curt.) Murrill.

Polyporus semisupinus Berk. & Curt. Grevillea 1 . 50. 1872.
Polyporus pachycheiles Ellis & Ev. Proc. Acad. Phila. 1894 : 322. 1894. (Type from Newfield, New Jersey.)

Pileus imbricate-cespitose, thin, rigid when dry, flabelliform, narrowly attached, sometimes with a short process resembling a stipe, 0.5–1 × 0.5–0.8 × 0.05–0.1 cm.; surface white to flavous, partially dull-latericeous, cartilaginous, glabrous or ornamented with a few abnormal hydnoid processes, subzonate; margin very thin, lobed, inflexed when dry : context very thin, white, horny and fragile when dry ; tubes short, minute, white, 2–3 mm. long, mouths angular, 4 to a mm., edges thin, dentate : spores smooth, hyaline.

TYPE LOCALITY : New England.
HABITAT : Dead fallen trunks of maple, alder, and other deciduous trees.
DISTRIBUTION : New England and New Jersey.

13. **Tyromyces undosus** (Peck) Murrill.

Polyporus undosus Peck, Ann. Rep. N. Y. State Mus. 34 : 42. 1881.

Pileus effused, narrowly reflexed, thin, fleshy-fibrous, soft when fresh, rigid when dry, 5–8 cm. broad, 2–3 mm. thick, the reflexed portion 0–7 mm. wide; surface slightly spongy-tomentose, sulcate-zonate, white ; margin very thin, undulate, inflexed when dry : context white, very thin, fleshy-fibrous to fragile ; tubes 1–3 mm. long, white, mouths large, irregular, angular, 1–2 to a mm., edges very thin, fragile, lacerate, white to slightly yellowish : spores smooth, hyaline.

TYPE LOCALITY : Catskill Mountains, New York.
HABITAT : On decaying trunks of hemlock and pine ; rarely on deciduous wood.
DISTRIBUTION : Maine, New York, and West Virginia.

14. **Tyromyces crispellus** (Peck) Murrill.

Polyporus crispellus Peck, Ann. Rep. N. Y. State Mus. 38 : 91. 1885.

Pileus thin, laterally elongate, fleshy to somewhat fragile, sessile, dimidiate, decurrent, 1.5–2.5 cm. long, extending laterally 2–10 cm., 2–4 mm. thick ; surface radiate-rugose, subglabrous, whitish, varied with isabelline to fulvous zones ; margin undulate or subcrispate, irregular, acute, inflexed when dry : context white, less than 1 mm. thick, hymenium uneven, somewhat cribrose ; tubes 1.5–2.5 mm. long, white to discolored within, mouths angular, irregular, 3–5 to a mm., edges white to slightly discolored, dentate to sharply lacerate : spores not examined.

TYPE LOCALITY : Osceola, New York.
HABITAT : Prostrate trunks of hemlock.
DISTRIBUTION : Known only from the type locality.

15. **Tyromyces Ellisianus** Murrill, sp. nov.

Pileus effused-reflexed, laterally connate, imbricate, fleshy-tough to rigid, the reflexed portion dimidiate or laterally elongate, 1–2 × 2–5 × 0.5–1.5 cm. ; surface uneven, pulverulent to glabrous or slightly scabrous, white to isabelline, with narrow testaceous zones, sometimes azonate ; margin acute or slightly obtuse, inflexed in dried specimens, white, entire or undulate : context rather thick, firm and somewhat fragile when dry, white, about 5 mm. thick ; tubes white to pallid or very pale-latericeous within, 3–5 mm. long, slender, mouths circular to slightly angular, rather even, 5 to a mm., edges thin, white to isabelline or pale-latericeous, entire or slightly dentate : spores globose, smooth, hyaline, 4 μ ; hyphae 8 μ ; cystidia none.

Type collected at Newfield, New Jersey, on a dead pine trunk, *J. B. Ellis*.
DISTRIBUTION : Known only from the type locality.

16. **Tyromyces caesius** (Schrad.) Murrill.

Boletus caesius Schrad. Spic. Fl. Germ. 167. 1794.
Boletus albidus Sow. Engl. Fungi *pl. 226*. 1799.
Polyporus caesius Fries, Syst. Myc. 1 : 56. 1821.

Pileus dimidiate, sessile, imbricate, often narrowly attached, with a prominent umbo, variable in habit and size, fleshy-tough, soft, spongy when fresh, fragile when dry, 1–2

×3–6×0.5–1.5 cm.; surface sodden, tomentose or villose-tomentose, azonate, murinous or griseous when fresh, becoming caesious or fading to nearly pure-white on drying, often nearly glabrous with age: context white, homogeneous, soft, friable, 5–8 mm. thick; tubes long and slender, 5–10 mm. long, caesious within, collapsing, friable, mouths angular, 3–4 to a mm., edges white or bluish-gray, very thin, dentate to long and sharply lacerate: spores elongate, smooth, hyaline, 5–5.5×1.5 μ.

TYPE LOCALITY: Germany.
HABITAT: Dead deciduous and coniferous wood.
DISTRIBUTION: Canada to Tennessee; also in Europe.
ILLUSTRATION: Sow. *loc. cit.*

17. **Tyromyces semipileatus** (Peck) Murrill.

Polyporus semipileatus Peck, Ann. Rep. N. Y. State Mus. 34: 43. 1881.

Pileus effused, largely resupinate, suborbicular or laterally elongate, very narrowly reflexed, the reflexed portion 0–1×2–5×0.3–0.5 cm.; surface white or pale-isabelline, subvillose or scabrous, azonate; margin thin, undulate, sometimes inflexed: context white, fleshy-tough to fragile, 2–4 mm. thick; tubes short, slender, white to yellowish within, mouths minute, circular to slightly angular, scarcely conspicuous, 7 to a mm., edges thin, very even, entire, white to pallid, often bluish-discolored in spots or blotches: spores smooth, hyaline, subglobose, 6–8 μ; hyphae 7–8 μ; cystidia none.

TYPE LOCALITY: Catskill Mountains, New York.
HABITAT: Dead branches of deciduous trees.
DISTRIBUTION: Eastern United States, Maine to Florida.

18. **Tyromyces chioneus** (Fries) Karst. Rev. Myc. 3^9: 17. 1881.

Polyporus chioneus Fries, Obs. Myc. 1: 125. 1815.
Polyporus albellus Peck, Ann. Rep. N. Y. State Mus. 30: 45. 1878. (Type from the Helderberg Mountains, New York.)

Pileus imbricate, sessile, dimidiate, convex, 2–4×3–6×1 cm.; surface sodden, grayish-cinereous or yellowish-white, azonate, smooth, pubescent to glabrous, acute but rather thick, entire, concolorous, fertile: context sodden and watery when fresh, with a mild flavor and acid odor, white, homogeneous and fragile when dry, cutting with a smooth surface, 7–10 mm. thick; tubes shorter than the thickness of the context, 2–4 mm. long, white to yellowish within, fragile, mouths even, glistening, angular, sinuous at times, 4 to a mm., white to ochraceous, edges thin, fimbriate-dentate: spores smooth, hyaline, cylindrical, curved, thin-walled, 4–5×1–2 μ; cystidia none.

TYPE LOCALITY: Sweden.
HABITAT: Branches and trunks of birch and other deciduous trees.
DISTRIBUTION: Eastern Canada to South Carolina and west to Wisconsin; also in Europe.

19. **Tyromyces Bartholomaei** (Peck) Murrill.

Polyporus Bartholomaei Peck, Bull. Torrey Club 23: 418. 1896.

Pileus thin, fleshy-tough, rather soft, obovate, attached by a flattened stem-like base, 3×3.5×0.2 cm.; surface azonate, white, opaque, finely spongy-tomentose; margin thin, broadly sterile, subentire: context white to pallid, 1–1.5 mm. thick, soft and somewhat spongy, very fragile when dry; tubes decurrent, less than 1 mm. long, white, mouths small, circular, angular, 4–5 to a mm., regular, edges entire to fimbriate-dentate: spores not examined.

TYPE LOCALITY: Rockport, Kansas.
HABITAT: Decaying sticks and chips on damp ground.
DISTRIBUTION: Known only from the type locality.

20. **Tyromyces anceps** (Peck) Murrill.

Polyporus anceps Peck, Bull. Torrey Club 22: 207. 1895.

Pileus effused, resupinate or narrowly reflexed, inseparable from the matrix, firm, subcorky, slightly flexible, rigid when dry, the reflexed portion 1–2 cm. long, extending laterally for several centimeters by confluence, about 1 cm. thick behind; surface minutely downy, sometimes rugosely pitted, milk-white or slightly discolored, azonate; margin

rather thin, acute, concolorous, undulate: context white, fleshy-tough, somewhat fragile when dry, 5–8 mm. thick; tubes 3–5 mm. long, white to pallid within, slender, mouths regular, even, circular, 5–6 to a mm., glistening, white to very pale-avellaneous, edges obtuse, entire: spores globose, smooth, hyaline, 5 μ; hyphae 8 μ; cystidia none.

TYPE LOCALITY: Stony Brook, Massachusetts.
HABITAT: Dead hemlock trunks.
DISTRIBUTION: Known only from the type locality.

21. **Tyromyces lacteus** (Fries) Murrill.

Polyporus lacteus Fries, Syst. Myc. 1: 359. 1821.

Pileus dimidiate, sessile, decurrent, convex, very soft, fleshy, becoming fragile and rigid when dry, 2–4 × 5–8 × 0.5–1.5 cm.; surface milk-white, sometimes slightly discolored, azonate, finely tomentose or pubescent to nearly glabrous, more or less silky-striate; margin abruptly thin, inflexed, undulate, concolorous: context spongy-fibrous, very fragile when dry, 5–10 mm. thick, milk-white, unchanging, zonate at times; tubes quite long, slender, equaling the thickness of the context, 5–10 mm., milk-white within, mouths regular, angular, 4–5 to a mm., glistening, becoming lacerate and somewhat uneven, edges thin, dentate to sharply toothed, fragile, white to slightly yellowish: spores allantoid, smooth, hyaline, 4–5 × 1–1.5 μ.

TYPE LOCALITY: Sweden.
HABITAT: Dead deciduous and coniferous wood.
DISTRIBUTION: Eastern Canada to Virginia and west to Kansas; also in Europe.
ILLUSTRATION: Fries, Ic. Hymen. *pl. 182, f. 1.*

22. **Tyromyces leucomallus** (Berk. & Curt.) Murrill.

Polyporus leucomallus Berk. & Curt. Jour. Linn. Soc. 10: 308. 1868.
Polyporus verecundus Berk. & Curt. Jour. Linn. Soc. 10: 309. 1868. (Type from Cuba.)
Trametes pura Berk. & Curt. Jour. Linn. Soc. 10: 320. 1868. (Type from Cuba.)

Pileus soft, fleshy, very fragile when dry, dimidiate, sessile, convex, 3–5 × 5–8 × 0.5–1.5 cm.; surface white to slightly cinereous, azonate, anoderm, tomentose, appressed-fibrose when young; margin acute to slightly obtuse, sometimes inflexed, brown or black when bruised: context very soft and friable when dry, milk-white, 0.5–1 cm. thick; tubes white, 3–10 mm. long, mouths minute, 6–7 to a mm., subcircular, edges white to pallid, subglistening, very thin and dentate to slightly lacerate: spores smooth, hyaline.

TYPE LOCALITY: Cuba.
HABITAT: Dead wood.
DISTRIBUTION: Cuba.

23. **Tyromyces albogilvus** (Berk. & Curt.) Murrill.

Polyporus albogilvus Berk. & Curt. Jour. Linn. Soc. 10: 308. 1868.

Pileus dimidiate to flabelliform, sometimes attached by a very narrow base, fleshy, rigid when dry, convex above, plane below, 2.5 × 2.5–3 × 0.4–0.7 cm.; surface finely tomentose to resinous-glabrous, gilvous when fresh, azonate, somewhat radiate-rugose; margin rather thick, often obtuse, entire, concolorous: context thin, white, fleshy to fragile, 1 mm. thick; tubes long, slender, 4–6 mm., white or pale-yellowish, mouths minute, angular, 6 to a mm., glistening, white or pale-yellowish, usually abruptly radially elongate near the margin, presenting the appearance of lamellae, edges thin, entire or slightly dentate: spores smooth, hyaline.

TYPE LOCALITY: Cuba.
HABITAT: Dead trunks in woods.
DISTRIBUTION: Known only from the type locality.

24. **Tyromyces fulvitinctus** (Berk. & Curt.) Murrill.

Polyporus fulvitinctus Berk. & Curt. Jour. Linn. Soc. 10: 313. 1868.
Hapalopilus fulvitinctus Murrill, Bull. Torrey Club 31: 419. 1904.

Pileus fleshy-tough, rigid and fragile when dry, sessile, dimidiate, applanate, decurrent, 3–4 cm. broad, 3–5 mm. thick; surface tomentose, alutaceous-fulvous, becoming glabrous behind, azonate, subsulcate, margin rather thick, fertile, entire or undulate: con-

text homogeneous, corky-fragile, whitish to isabelline, 1–2 mm. thick; tubes short, 2–3 mm. long, white to isabelline or avellaneous, mouths small, circular to angular, pale-umbrinous in dried specimens, edges thin, obtuse, entire: spores subglobose to ovoid, smooth, hyaline, 3–4 μ; hyphae hyaline; cystidia none.

TYPE LOCALITY: Cuba.
HABITAT: Dead wood.
DISTRIBUTION: Cuba.

25. **Tyromyces duracinus** (Pat.) Murrill.

Leptoporus duracinus Pat. Bull. Soc. Myc. Fr. 18: 174. 1902.

Pileus convex, rigid, hard, 1.5–2.5 cm. broad, 2–4 mm. thick; surface isabelline to pale-fulvous, darker near the margin, glabrous, marked with 1–2 concentric furrows; margin inflexed, usually acute: context hard, fragile, white, 1–2 mm. thick; tubes 1 mm. long, white to discolored, mouths small, circular, 5 to a mm., edges white to avellaneous, obtuse, entire: spores cylindrical, smooth, hyaline, 4 × 1 μ.

TYPE LOCALITY: Guadeloupe.
HABITAT: Dead branches of *Cecropia peltata*.
DISTRIBUTION: Known only from the type locality.

DOUBTFUL SPECIES

Polyporus impolitus Fries, Nov. Symb. 58. 1851. Described from specimens collected by Oersted on trunks of trees in Costa Rica. These specimens were first preserved in alcohol and afterwards dried. They have not been seen by me.

Polyporus trichrous Berk. & Curt. Ann. Mag. Nat. Hist. 12: 434. 1853. Collected in South Carolina by Ravenel. Type not found. Species doubtfully assigned to *Tyromyces* chiefly on account of its cheesy consistency.

Leptoporus mexicanus Pat. Bull. Soc. Myc. Fr. 14: 55. 1898. Collected by Maury in Mexico on trunks of coniferous trees. Type not seen.

Leptoporus nauseosus Pat.; Duss, Énum. Champ. Guad. 27. 1903. Collected by Duss in Guadeloupe.

28. **SPONGIPELLIS** Pat. Hymén. Eur. 140. 1887.

Postia Karst. Rev. Myc. 3[9]: 17. 1881. Not *Postia* Boiss. & Blanch. 1875.

Hymenophore annual, epixylous, sessile, dimidiate, simple or imbricate, rather large; surface white, anoderm, sodden and bibulous: context white, duplex, spongy above, firm below; hymenium concolorous, tubes thin-walled: spores smooth, hyaline.

Type species, *Spongipellis spumeus* (Sow.) Pat.

Pileus more than 1 cm. thick, usually large.
  Tubes white or slightly discolored.
    Margin of pileus thick and rounded.
      Tubes large, 1 mm. or more across. — 1. *S. unicolor.*
      Tubes much smaller. — 2. *S. occidentalis.*
    Margin of pileus thin, not rounded.
      Surface conspicuously hairy. — 3. *S. borealis.*
      Surface nearly glabrous. — 4. *S. delectans.*
  Tubes becoming very dark-colored.
    Tubes minute, resinous. — 5. *S. fissilis.*
    Tubes large, 1–2 to a mm., not resinous. — 6. *S. luridescens.*
Pileus less than 1 cm. thick, small or medium.
  Pileus 5 cm. or less broad. — 7. *S. hydrophilus.*
  Pileus 6 cm. or more broad.
    Surface finely tomentose. — 8. *S. galactinus.*
    Surface conspicuously hairy. — 9. *S. substuppeus.*

1. **Spongipellis unicolor** (Schw.) Murrill.

Boletus unicolor Schw. Schr. Nat. Ges. Leipzig 1: 97. 1822.
Sistotrema spongiosum Schw. Schr. Nat. Ges. Leipzig 1: 101. 1822. (Type from North Carolina.)
Polyporus labyrinthicus Fries, Elench. Fung. 83. 1828.
Polyporus unicolor Fries, Epicr. Myc. 458. 1838.
Polyporus obtusus Berk. Ann. Mag. Nat. Hist. 3: 390. 1839. (Type from North America.)
Polyporus Schulzeri Fries, Hymen. Eur. ed. 2. 556. 1874. (Type from Hungary.)
Polyporus tomentoso-quercinus A. E. Johnson, Bull. Minn. Acad. Nat. Sci. 1: 338. 1878. (Type from Minnesota.)
Trametes unicolor Murrill, Bull. Torrey Club 32: 638. 1906.

Pileus somewhat imbricate, large and spongy, at length indurate, dimidiate, sessile, often ungulate, 5–7 × 10–15 × 3–5 cm.; surface spongy-tomentose, hirtose, azonate, smooth, sordid-white to isabelline or fulvous; margin very thick and rounded, sterile, entire, concolorous: context spongy-fibrous, white, indurate with age, especially below, 1–2 cm. thick; tubes very long, 2–3 cm., white to isabelline within, mouths large, irregular, often sinuous, 1–2 mm. broad, edges thin, fimbriate-dentate to slightly lacerate, white to isabelline, at length bay and resinous in appearance: spores globose, smooth, hyaline, 6–8 μ; hyphae hyaline, 6 μ; cystidia none.

TYPE LOCALITY: North Carolina.
HABITAT: Diseased living trunks of various species of oak; also found on living maples.
DISTRIBUTION: New Jersey to Alabama and west to Mississippi and Minnesota; also in Europe.
ILLUSTRATIONS: Rep. Mo. Bot. Gard. 16: *pl. 13–16*; Kalchbr. Ic. Hymen. Hung. *pl. 34, f. 1* (as *Polyporus Schulzeri*).
EXSICCATI: Ellis & Ev. N. Am. Fungi *307*; Rab.-Wint. Fungi Eur. *3330*.

2. **Spongipellis occidentalis** Murrill, sp. nov.

Pileus thick, dimidiate, sessile, subimbricate, convex above, 5–8 × 7–10 × 2–3 cm.; surface conspicuously hispid-tomentose, spongy, azonate, smooth or somewhat rugose, white to cremeous or isabelline; margin very thick, rounded, concolorous, fertile: context soft, spongy-fibrous, white to slightly yellowish, 1–2 cm. thick; tubes long and slender, 1 cm. long, white to straw-colored within, fulvous in old dried specimens, mouths minute, angular, 5 to a mm., edges very thin, white to cremeous, fimbriate-dentate, becoming lacerate, collapsing and turning fulvous in old specimens: spores ellipsoid, smooth, hyaline, 4–5 × 6–7 μ; hyphae 6 μ; cystidia none.

Type collected at Ithaca, New York, on a beech log, October 17, 1899, *K. M. Wiegand*.
DISTRIBUTION: New York.

3. **Spongipellis borealis** (Fries) Pat. Tax. Hymén. 84. 1900.

Polyporus borealis Fries, Syst. Myc. 1: 366. 1821.

Pileus sessile, subimbricate, dimidiate to flabelliform, often narrowly attached, spongy to corky, very tough, moist and juicy when fresh, 5–8 × 8–12 × 2–4 cm.; surface uneven, soft and spongy, hirtose-tomentose, azonate, white to yellowish; margin thin, white, entire, somewhat discolored on drying: context fibrous-coriaceous above, fibrous-woody below, white, 0.5–1.5 cm. thick; tubes 4–8 mm. long, white to pallid within, mouths angular, irregular, somewhat radiately elongate, sinuous at times, 1–2 to a mm., stuffed when young, edges thin, white to ochraceous, dentate to lacerate: spores ovoid, smooth, hyaline, 5–6 × 3–4 μ; hyphae 6–7 μ; cystidia none.

TYPE LOCALITY: Mountains of Småland, Sweden, on trunks of *Abies*.
HABITAT: Trunks of conifers.
DISTRIBUTION: Europe and temperate North America.
EXSICCATI: Romell, Fungi Scand. *115*; Thüm. Fungi Austr. *1107*; Karst. Finl. Fungi *238*.

4. **Spongipellis delectans** (Peck) Murrill.

Polyporus delectans Peck, Bull. Torrey Club 11: 26. 1884. — Morgan, Jour. Cinc. Soc. Nat. Hist. 8: 99. 1885.

Pileus simple or subimbricate, sessile, dimidiate, convex or subtriangular, fleshy-fibrous to corky, 5 × 5–10 × 2–5 cm.; surface azonate, white to ochraceous-isabelline, uneven, glabrous or slightly floccose-tomentose; margin thin, acute, concolorous, sterile: context soft and spongy above, firm and woody below, white, 1 cm. or more thick; tubes 5–8 mm. long, white within, mouths large, subcircular or angular, somewhat irregular, 1–3 to a mm., edges thin, entire to slightly dentate, white to slightly discolored: spores subglobose to ovoid, smooth, thin-walled, hyaline, 5–6 × 7–8 μ; hyphae 8 μ; cystidia none.

TYPE LOCALITY: Ohio.
HABITAT: Trunks of elm, maple, and other deciduous trees.
DISTRIBUTION: Ohio.
ILLUSTRATION: Jour. Cinc. Soc. Nat. Hist. 8: *pl. 1*.

5. **Spongipellis fissilis** (Berk. & Curt.) Murrill.

Polyporus fissilis Berk. & Curt. Jour. Bot. & Kew Misc. 5 : 234. 1853.—Grevillea 1 : 50. 1872.

Pileus dimidiate to flabelliform, subimbricate, elongate and decurrent behind, convex, 4–6 × 7–15 × 1–2 cm.; surface white to isabelline, at length discolored, opaque, somewhat radiate-rugose, finely spongy-tomentose, setose or fibrillose to subglabrous; margin rather thin, fertile, undulate to lobed, discolored and inflexed when dry: context conspicuously zonate, fibrous, fissile, watery and white when fresh, rigid and hard, with an unpleasant odor, on drying, 5–10 mm. thick; tubes 3–8 mm. long, white to isabelline, at length resinous and bay to black, mouths angular, 2 to a mm., edges thin, nearly entire, collapsing into a rigid mass: spores ovoid, smooth, hyaline, 5 × 3 μ; hyphae 5 μ; cystidia none.

TYPE LOCALITY: North Carolina.
HABITAT: Decayed deciduous wood.
DISTRIBUTION: North Carolina to Florida and Louisiana.

6. **Spongipellis luridescens** Murrill, sp. nov.

Pileus compressed-ungulate, subimbricate, sessile, dimidiate, plane below, 3 × 5 × 1–2 cm.; surface smooth, spongy-tomentose, azonate, anoderm, isabelline to fulvous or fuliginous; margin rather thick, either acute or rounded, entire, sterile, concolorous: context soft, punky, white to discolored, 3–5 mm. thick, 5–8 mm. long, white to isabelline within, darker near the mouths, which are circular to angular, sinuous and slightly irpiciform behind, 1–2 to a mm., edges thin, firm, corky, entire to lacerate, isabelline to fuliginous with age: spores ellipsoidal, smooth, hyaline, 3–4 × 1–2 μ; hyphae 3 μ, yellowish-white; cystidia none.

Type collected at Hall's Delight, Jamaica, 450 meters, on old stumps, October 25, 1902, *F. S. Earle 114*.

DISTRIBUTION: Known only from the type locality.

7. **Spongipellis hydrophilus** (Berk. & Curt.) Murrill.

Polyporus hydrophilus Berk. & Curt. Jour. Linn. Soc. **10**: 306. 1868.

Pileus thin, somewhat cespitose, flabelliform, attached by a tubercle, fleshy and very watery when fresh, becoming rigid and contorted when dry, 2–3 × 3–5 × 0.2–0.4 cm.; surface isabelline, finely hispid-tomentose, zonate and concentrically furrowed near the margin, which is very thin, incurved and bay to black in dried specimens: context fleshy to rigid and hard, white to slightly yellowish, 1–2.5 mm. thick; tubes short, 1–1.5 mm. long, white to isabelline within, mouths minute, circular to angular, 6 to a mm., collapsing, edges thin, dentate, white to isabelline, glistening: spores smooth, hyaline.

TYPE LOCALITY: Cuba.
HABITAT: On logs.
DISTRIBUTION: Cuba; British Honduras.

8. **Spongipellis galactinus** (Berk.) Pat. Tax. Hymén. 84. 1900.

Polyporus galactinus Berk. Lond. Jour. Bot. **6**: 321. 1847.
? *Trametes malicola* Berk. & Curt. Jour. Acad. Phila. II. **3**: 209. 1856. (Type from Pennsylvania.)
Polyporus immitis Peck, Ann. Rep. N. Y. State Mus. **35**: 135. 1884. (Type from New York.)

Pileus cespitose-imbricate, soft, spongy and watery when fresh, rigid and brittle when dry, dimidiate or reniform, elongate behind, applanate or convex, much contorted on drying, 3–5 × 5–10 × 0.5–1 cm.; surface hispid or strigose-tomentose, white, azonate, smooth or slightly tuberculose, becoming isabelline on drying; margin thin, but often obtuse, sterile, entire, discolored and inflexed when dry: context zonate, firm, fibrous-woody below, spongy above, 3–7 mm. thick; tubes 3–5 mm. long, slender, white to isabelline, mouths minute, white, glistening, angular or slightly flexuose, 6 to a mm., edges very thin, lacerate-dentate, at length isabelline: spores ellipsoidal, smooth, hyaline, 3–4 × 1.5–2 μ.

TYPE LOCALITY: Waynesville, Ohio, on rotten trunks.
HABITAT: Dead or diseased trunks of deciduous trees.
DISTRIBUTION: Eastern Canada to Ohio.

9. **Spongipellis substuppeus** (Berk. & Cooke) Murrill.

Polyporus substuppeus Berk. & Cooke, Jour. Linn. Soc. **15**: 380. 1877.

Pileus simple or imbricate, dimidiate, umbonate-sessile or broadly attached, decurrent, 3–4 × 4–7 × 0.3–0.8 cm.; surface floccose, substuppeous, spongy, azonate, pale-ochraceous to discolored; margin thin, entire, easily discolored: context soft, fibrous-spongy, white to discolored, 1–3 mm. thick; tubes 2–4 mm. long, white to pale-latericeous within, mouths large, irregular, angular, radially elongate at times, 1–3 to a mm., edges thin, dentate, white to umbrinous: spores globose, smooth, hyaline, 5–7 μ; hyphae 7 μ; cystidia none.

TYPE LOCALITY: Brazil.
HABITAT: On dead wood.
DISTRIBUTION: Cuba; also in Brazil.

DOUBTFUL SPECIES

Boletus undulatus Schw. Schr. Nat. Ges. Leipzig 1: 96. 1822. *Polyporus undulatus* Fries, Elench. Fung. 87. 1828. Described from North Carolina. Type not found. Apparently near *S. galactinus*.

Polyporus fimbriporus Schw. Trans. Am. Phil. Soc. II. 4: 155. 1832. Described from specimens collected on small fallen chestnut limbs at Bethlehem, Pa. The type specimens at Philadelphia show a close relationship to *S. fissilis*, but are too meager to determine the true position of the species without additional material.

29. **BJERKANDERA** Karst. Medd. Soc. Faun. Fl. Fenn. **5**: 38. 1879.

Merisma Gill. Champ. Fr. 1: 688. 1878. Not *Merisma* Pers. 1797.
Myriadoporus Peck, Bull. Torrey Club 11: 27. 1884.

Hymenophore annual, epixylous, sessile, anoderm, glabrous, azonate, corky: context white, tough or woody, not friable when dry; tubes thin-walled, more or less smoke-colored, mouths polygonal: spores smooth, hyaline.

Type species, *Polyporus adustus* Fries.

Hymenium smoke-colored when young, soon becoming black.
- Tubes black within. — 1. *B. adusta*.
- Tubes white within, the mouths black. — 2. *B. albostygia*.

Hymenium pallid when very young, becoming more or less blackish with age.
- Confined to temperate regions.
  - Tubes round, equal and rather thick-walled at maturity; plant not fragrant. — 3. *B. fumosa*.
  - Tubes angular, unequal, thin-walled and lacerate at maturity; plant fragrant. — 4. *B. puberula*.
- Confined to tropical regions; known only from Cuba.
  - Pileus 5 cm. or less broad. — 5. *B. terebrans*.
  - Pileus 10–20 cm. broad. — 6. *B. subsimulans*.

1. **Bjerkandera adusta** (Willd.) Karst. Medd. Soc. Faun. Fl. Fenn. **5**: 38. 1879.

Boletus adustus Willd. Fl. Berol. 392. 1787.
Boletus fuscoporus Planer, Ind. Pl. Erf. 26. 1788.
Boletus suberosus Batsch, Elench. Fung. *pl. 226*. 1789.
Boletus pelleporus Bull. Herb. Fr. *pl. 501, f. 2*. 1790.
Boletus carpineus Sow. Engl. Fungi *pl. 231*. 1799.
Boletus adustus crispus Pers. Obs. Myc. 2: 8. 1799.
Polyporus crispus Fries, Obs. Myc. 1: 127. 1815.
Polyporus adustus Fries, Syst. Myc. 1: 363. 1821.
Polyporus pallescens Fries, Syst. Myc. 1: 369. 1821.
Boletus isabellinus Schw. Schr. Nat. Ges. Leipzig 1: 96. 1822. (Type from North Carolina.)
Polyporus subcinereus Berk. Ann. Mag. Nat. Hist. **3**: 391. 1839. (Type from boreal North America.)
Polyporus Halesiae Berk. & Curt. Ann. Mag. Nat. Hist. II. **12**: 434. 1853.—Grevillea 1: 52. 1872. (Type from Georgia, on *Halesia*.)
Polyporus Lindheimeri Berk. & Curt. Grevillea 1: 50. 1872. (Type from Texas.)
Myriadoporus adustus Peck, Bull. Torrey Club 11: 27. 1884.
Polyporus Burtii Peck, Bull. Torrey Club **24**: 146. 1897. (Type from Vermont, on birch wood.)

Pileus cespitose-imbricate, decurrent, sometimes effused, conchate, fleshy-tough or corky, somewhat flexible when dry, 2–4 × 4–8 × 0.2–0.4 cm.; surface undulate, indistinctly zonate, especially near the margin, finely tomentose or villose, isabelline with slightly

darker markings; margin thin, undulate, sterile, pallid, usually becoming black as though scorched: context fibrous-corky, white, 1–3.5 mm. thick; tubes short, 1 mm. or less, smoky-white to blackish within, mouths regular, angular, 5–6 to a mm., smoke-colored and pruinose when young, soon becoming grayish-black, edges thin, entire: spores ellipsoid-allantoid, smooth, hyaline, 3–5 × 1.5–2.5 μ.

TYPE LOCALITY: Germany.
HABITAT: Dead deciduous wood.
DISTRIBUTION: Cosmopolitan.
ILLUSTRATIONS: Bull. Herb. Fr. *pl. 501, f. 2;* Sow. Engl. Fungi *pl. 231.*
EXSICCATI: Ellis & Ev. Fungi Columb. *206;* Clements, Crypt. Form. Colo. *168;* Ellis & Ev. N. Am. Fungi *116;* Romell, Fungi Scand. *8;* Krieger, Fungi Sax. *1319;* Rab.-Wint. Fungi Eur. *2729.*

2. **Bjerkandera albostygia** (Berk. & Curt.) Murrill.

Polyporus albostygius Berk. & Curt. Jour. Linn. Soc. **10**: 309. 1868.

Pileus effused, resupinate to shortly reflexed, 5 mm. thick; surface pallid, finely tomentose, smooth; margin obtuse, bay-brown in dried specimens, entire, fertile, finely tuberculose: context thin, less than 1 mm., white to slightly pallid, homogeneous, somewhat fragile; tubes rather long, slender, stuffed, white to yellowish within, darker near the mouths, 2–3 mm. long, mouths minute, somewhat angular, regular, even, 8 to a mm., edges black, rather thick, obtuse, entire: spores not examined.

TYPE LOCALITY: Cuba.
HABITAT: Dead wood.
DISTRIBUTION: Known only from the type locality.

3. **Bjerkandera fumosa** (Pers.) Karst. Medd. Soc. Faun. Fl. Fenn. **5**: 38. 1879.

? *Boletus imberbis* Bull. Herb. Fr. *pl. 445, f. 1A.* 1789.
Boletus fumosus Pers. Syn. Fung. 530. 1801.
Polyporus fumosus Fries, Obs. Myc. **2**: 257. 1818.
? *Polyporus holmiensis* Fries, Nov. Symb. 42. 1851. — Ic. Hymen. *pl. 181, f. 1.*
? *Polyporus salignus* Fries, Hymen. Eur. 452. 1871.

Pileus cespitose-imbricate, fleshy-corky, firm, sessile, dimidiate, conchate, decurrent, 2–4 × 5–10 × 0.5–2 cm.; surface smooth, finely tomentose, pale-isabelline, subzonate at times; margin thin, concolorous, undulate, easily blackening, usually broadly sterile: context fibrous-corky, somewhat zonate, white to pallid, 5–15 mm. thick; tubes short, 2–3 mm. long, white to discolored within, mouths regular, even, circular, 4–5 to a mm., whitish to smoky-isabelline and finally blackish with extreme age, edges thick, entire: spores globose, smooth, hyaline, 5–8 μ; hyphae 7–8 μ; cystidia none.

TYPE LOCALITY: Europe.
HABITAT: Decayed deciduous wood.
DISTRIBUTION: Northern hemisphere.
EXSICCATI: Shear, N. Y. Fungi *31;* Rab.-Wint. Fungi Eur. *3644;* Ellis & Ev. N. Am. Fungi *2902.*

4. **Bjerkandera puberula** (Berk. & Curt.) Murrill.

Daedalea puberula Berk. & Curt. Grevillea **1**: 67. 1872.
Polyporus fragrans Peck, Ann. Rep. N. Y. State Mus. **30**: 45. 1878. (Type from New York, on dead elm trunks.)
Bjerkandera fragrans Murrill, Bull. Torrey Club **32**: 636. 1906.

Pileus irregular, dimidiate, imbricate, effused-reflexed, 2.5–5 × 5–10 × 0.5–1.5 cm.; surface minutely tomentose, somewhat tuberculose, pale red-gray or alutaceous, becoming ochraceous or dull-red after rains; margin thin, concolorous, at times rugose: context fleshy-tenacious to soft-corky, slightly zoned, subfibrous, concolorous, with a distinct odor of dry seneca-grass; tubes 2 mm. long, at first whitish, becoming darker with age and black-spotted when bruised, the mouths minute, angular, unequal, 2 to a mm., at length sinuate, dissepiments thin, acute, dentate or lacerate: spores globose or ovoid, smooth, hyaline, 5–6 μ; hyphae hyaline, 4–6 μ; cystidia none.

TYPE LOCALITY: Pennsylvania.
HABITAT: Dead trunks of deciduous trees, especially elm.
DISTRIBUTION: Ontario to New Jersey, and west to Kansas.

5. **Bjerkandera terebrans** (Berk. & Curt.) Murrill.

Polyporus terebrans Berk. & Curt. Jour. Linn. Soc. 10 : 306. 1868.

Pileus subfleshy, thick, flabelliform, convex, 4 × 4–5 × 1 cm., attached by a thick, laterally-compressed, concolorous, pubescent elongation resembling a stipe, but probably the result of an effort on the part of the sporophore to escape from the substratum ; surface isabelline or luteous, pubescent-scabrous, azonate, smooth ; margin obtuse, entire : context white to isabelline, homogeneous, soft-corky, nearly 1 cm. thick ; tubes whitish when young, fuliginous in dried specimens, less than 1 mm., mouths 4 to a mm., edges obtuse, entire : spores not examined.

TYPE LOCALITY : Cuba.
HABITAT : On dead trees.
DISTRIBUTION : Known only from the type locality.

6. **Bjerkandera subsimulans** Murrill.

Polyporus simulans Berk. & Curt. in Sacc. Syll. Fung. 6 : 117. 1888. Not *Bjerkandera simulans* Karst. 1888.

Pileus explanate, fleshy-tough, sessile, dimidiate or fan-shaped, often attached by a narrow base, 5–10 × 10–15 × 0.3–0.7 cm. ; surface smooth, partially glabrous and partially clothed with scanty, flexible hairs ; margin thin, acute, broadly sterile, lobed, with a zone of appressed hairs and blackish as though scorched for 5–10 mm. : context fibrous, hard and corky when dry, white to isabelline ; tubes 2–5 mm. long, white to fuliginous, mouths angular, irregular, 1–3 to a mm., edges thin : spores not examined.

TYPE LOCALITY : Cuba.
HABITAT : Dead trunks.
DISTRIBUTION : Known only from the type locality.

30. **TRAMETES** Fries, Gen. Hymen. 11. 1836.

Hymenophore annual, epixylous, sessile ; surface anoderm, white, azonate : context white, homogeneous, coriaceous to soft-corky ; hymenium concolorous, rigid ; tubes thin-walled, mouths circular to irregular : spores smooth, hyaline.

Type species, *Polyporus suaveolens* (L.) Fries.

Context punky, soft.
  Surface entirely white.
    Pileus small, less than 5 cm. broad. — 1. *T. nivosa.*
    Pileus large, 10 cm. or more broad.
      Tubes small, 4 to a mm.; found on *Robinia.* — 2. *T. robiniophila.*
      Tubes large, 2 to a mm.; found on *Salix.* — 3. *T. suaveolens.*
  Surface partly brown or red, especially behind. — 4. *T. cubensis.*
Context corky, rather firm.
  Pileus effused-reflexed, surface more or less murinous. — 5. *T. submurina.*
  Pileus normally expanded, surface white or yellowish.
    Pileus large, 10 cm. broad. — 6. *T. subnivosa.*
    Pileus small, 5 cm. broad.
      Context about 5 mm. thick. — 7. *T. havannensis.*
      Context 2–3 cm. thick. — 8. *T. lignea.*

1. **Trametes nivosa** (Berk.) Murrill.

Polyporus nivosus Berk. Jour. Bot. & Kew Misc. 8 : 196. 1856.

Pileus sessile, dimidiate, conchate or applanate, 2–3 × 3–5 × 1 cm.; surface smooth, anoderm, azonate, glabrous, snow-white, pale-isabelline in dried specimens ; margin thin, concolorous, entire : context homogeneous, soft, punky-corky, white, 5 mm. thick ; tubes 2–4 mm. long, slender, white to pallid within, mouths circular, 5 to a mm., edges thin, firm, entire, glistening, white to slightly discolored : spores smooth, hyaline.

TYPE LOCALITY : Panuré, Brazil.
HABITAT : Dead wood.
DISTRIBUTION : West Indies to Brazil.

2. **Trametes robiniophila** Murrill, sp. nov.

Pileus more or less imbricate, dimidiate, sessile, convex above, plane or concave below, sometimes undulate, 6–8 × 10–15 × 2–4 cm.; surface milk-white, azonate, anoderm, finely pubescent, becoming glabrous, uneven, slightly yellowish aud discolored with age ;

margin thick, usually obtuse, concolorous, entire: context white, soft, punky, very juicy when fresh, with a strong fungous odor, usually attacked by insects; tubes slender, 3–5 mm. long, opaque, white to discolored within, mouths minute, circular to very slightly angular, edges thick, entire, becoming rather thin, sordid-white to umbrinous or fuliginous in dried specimens, isabelline when bruised: spores globose, ovoid, smooth, hyaline, 6–8 μ in diameter.

Type collected at Falls Church, Virginia, on decayed spots in living trunks of *Robinia Pseudacacia*, July 11, 1904, *W. A. Murrill.*

DISTRIBUTION: Pennsylvania to Virginia and Missouri.

3. **Trametes suaveolens** (L.) Fries, Gen. Hym. 11. 1836.

Boletus suaveolens L. Sp. Pl. 1177. 1753.
Polyporus suaveolens Fries, Syst. Myc. 1: 366. 1821.
Polyporus odorus Sommerf. Suppl. Fl. Lapp. 275. 1826.—Fries, Elench. Fung. 90. 1828.
Trametes odora Fries, Epicr. Myc. 491. 1838.—Murrill, Bull. Torrey Club 32: 637. 1905.

Pileus large, subimbricate, dimidiate, sessile, convex above, plane or concave below, 4–6 × 5–12 × 1–3 cm.; surface smooth, anoderm, azonate, finely villose-tomentose to nearly glabrous, white to pale-isabelline; margin thick, sterile, entire: context white, punky-corky, 1–2 cm. thick, very fragrant when fresh, with the odor of anise; tubes 5–15 mm. long, white within, mouths circular, 2 to a mm., edges at first very thick, white, entire, becoming thinner and often blackish with age: spores oblong-ovoid, subsinuate, smooth, hyaline, 8–9 × 3–5 μ; hyphae 7 μ; cystidia none.

TYPE LOCALITY: Sweden.
HABITAT: Decaying trunks of willow.
DISTRIBUTION: Throughout the northern hemisphere.
ILLUSTRATIONS: Sow. Engl. Fungi *pl. 228;* Hussey, Ill. Brit. Myc. *pl. 43.*
EXSICCATI: Ellis, N. Am. Fungi *10;* Ellis & Ev. Fungi Columb. *1206;* Shear, N. Y. Fungi *113;* Cavara, Fungi Longob. *16.*

4. **Trametes cubensis** (Mont.) Sacc. Syll. Fung. 9: 198. 1891.

Polyporus cubensis Mont. Ann. Sci. Nat. Bot. II. 8: 364. 1837.—Mont. Pl. Cell. Cuba 404. 1842.
Cubamyces cubensis Murrill, Bull. Torrey Club 32: 480. 1905.

Pileus large, applanate, dimidiate, sessile, corky, rigid or subrigid, comparatively thin, 5–10 × 10–20 × 0.5–1.5 cm.; surface pelliculose, finely tomentose to glabrous, slightly concentrically zoned or furrowed, white to isabelline, latericeous or bay behind or in blotches, or rarely over the whole surface; margin thin, obtuse, sterile, white, entire or undulate: context soft, punky, white to slightly yellowish, 3–10 mm. thick; tubes 2–5 mm. long, slender, firm, corky, mouths very even, regular, circular, 4 to a mm., edges thick, entire, white to ochraceous: spores smooth, hyaline.

TYPE LOCALITY: Havana, Cuba.
HABITAT: Dead wood.
DISTRIBUTION: Southern Florida, West Indies, and Central America.
ILLUSTRATION: Mont. Pl. Cell. Cuba *pl. 16, f. 3.*

5. **Trametes submurina** Murrill, sp. nov.

Pileus broadly effused, reflexed, imbricate, sessile, dimidiate, laterally connate, 1–2.5 × .3–5 × 0.5–1.5 cm.; surface rough, uneven, anoderm, finely tomentose, murinous, sometimes almost white; margin rather thick, undulate, pallid: context white, zonate, fibrous-corky, firm, 5–8 mm. thick; tubes 1–2 mm. long, white to slightly yellowish within, mouths circular, quite regular, 4–5 to a mm., edges rather thick, entire, becoming thinner and slightly dentate; white to discolored: spores smooth, hyaline.

Type collected at Hope Gardens, Jamaica, on old logs, November 16, 1902, *F. S. Earle 483.*
DISTRIBUTION: Jamaica; Cuba; St. John.

6. **Trametes subnivosa** Murrill, sp. nov.

Pileus imbricate, sessile, dimidiate, laterally connate, very rigid when dry, 3–5 × 6–8 × 1 cm.; surface finely tomentose to glabrous, smooth, anoderm, opaque, white to sordid-white, azonate; margin thin, irregular, undulate, sterile, pallid: context zonate, white to discolored, fibrous-corky, very firm, 4–7 mm. thick; tubes 2–4 mm. long, white within,

mouths regular, nearly even, 6 to a mm., edges thin, subentire, white to isabelline or avellaneous, glistening, umbrinous with age: spores smooth, hyaline.

Type collected in Louisiana, on dead deciduous wood, January, 1887, *A. B. Langlois*.
DISTRIBUTION: Missouri, Florida, Mississippi, and Louisiana.

7. **Trametes havannensis** (Berk. & Curt.) Murrill.

Polyporus havannensis Berk. & Curt. Jour. Linn. Soc. 10: 310. 1868.

Pileus simple or subimbricate, dimidiate, convex above, plane or concave below, sessile or umbonate-sessile, 2–3 × 4–5 × 0.5–1 cm.; surface zonate, smooth, sometimes sulcate, finely pubescent to glabrous, ochraceous to subfulvous; margin sterile, pubescent, pallid, acute but rather thick: context firm, corky, white, homogeneous, 3–8 mm. thick; tubes slender, 3–5 mm. long, white within, mouths circular, 4–5 to a mm., edges thick, white, entire, becoming thinner, glistening and subfulvous: spores smooth, hyaline.

TYPE LOCALITY: Cuba.
HABITAT: Dead wood.
DISTRIBUTION: Cuba; St. Thomas.

8. **Trametes lignea** Murrill, sp. nov.

Pileus ungulate, dimidiate, sessile, somewhat laterally connate, slightly decurrent, 3 × 6 × 3 cm.; surface smooth, anoderm, azonate, glabrous, white to isabelline; margin thick, obtuse, entire, concolorous: context homogeneous, woody, white, 2.5 cm. thick; tubes 5 mm. long, white within, mouths angular, irregular, averaging 3 to a mm., edges rather thin, entire, white to slightly discolored: spores smooth, hyaline.

Type collected in Nicaragua, on dead timber, in 1891–2, *C. L. Smith*.
DISTRIBUTION: Known only from the type locality.

31. **PIPTOPORUS** Karst. Rev. Myc. 3^9: 17. 1881.

Hymenophore annual, epixylous, umbonate-sessile; surface smooth, azonate, pelliculose: context white, fleshy-tough; hymenium at length separating smoothly from the context, tubes white, thick-walled: spores smooth, cylindrical, hyaline.

Type species, *Boletus betulinus* Bull.

1. **Piptoporus suberosus** (L.) Murrill, Jour. Myc. 9: 94. 1903.

Boletus suberosus L. Sp. Pl. 1176. 1753.
Boletus betulinus Bull. Herb. Fr. *pl. 312*. 1786.
Piptoporus betulinus Karst. Rev. Myc. 3^9: 17. 1881.

Pileus fleshy to corky, compressed-ungulate, convex above, plane below, attached by a short umbo behind, varying to bell-shaped when hanging from horizontal trunks, 5–30 × 5–20 × 2–5 cm.; surface smoky, covered with a thin, separating pellicle, glabrous, devoid of markings, cracking with age; margin velvety, concolorous, obtuse, projecting beyond the hymenium nearly a centimeter: context fleshy-tough, elastic, homogeneous, 3 cm. thick, milk-white; tubes 0.5 cm. long, 2–3 to a mm., sodden-white, separated from the context by a thin pink layer, mouths very irregular, dissepiments thicker than the pores, obtuse, entire, crumbling away in age, leaving the smooth, white context: spores white, cylindrical, curved, 4–5 μ in length.

TYPE LOCALITY: Sweden.
HABITAT: Dead or decaying trunks of species of birch.
DISTRIBUTION: Northern parts of North America, Europe and Asia; extends south in the United States to New Jersey.
ILLUSTRATIONS: Bull. Herb. Fr. *loc. cit.*; Sow. Engl. Fungi *pl. 212*.
EXSICCATI: Ellis & Ev. N. Am. Fungi *1691*; Jacz. Fungi Rossiae *76*; Thüm. Myc. Univ. *906*; Krieger, Fungi Sax. *907*; Romell, Fungi Scand. *10*; Allesch. & Schn. Fungi Bavar. *141*.

32. **EARLIELLA** Murrill, Bull. Torrey Club 32: 478. 1905.

Hymenophore medium to large, annual, epixylous, semi-resupinate, thin and dry but rigid; surface pelliculose, glabrous, zonate, more or less reddish-brown in color: context white, coriaceous, zonate; hymenium flesh-colored, tubes medium, irregular, becoming thin-walled: spores smooth, hyaline.

Type species, *Earliella cubensis* Murrill.

1. **Earliella corrugata** (Pers.) Murrill, Bull. Torrey Club **34**: 468. 1907.

Polyporus corrugatus Pers; Gaud. Voy. Freyc. Bot. 172. 1826. (Type from Rawak island.)
Polyporus fusco-badius Pers; Gaud. Voy. Freyc. Bot. 172. 1826. (Type from the Mariana islands.)
Polyporus scabrosus Pers; Gaud. Voy. Freyc. Bot. 172. 1826. (Type from the Mariana islands.)
? *Polyporus mariannus* Pers; Gaud. Voy. Freyc. Bot. 173. 1826. (Type from the Mariana islands.)
Daedalea sanguinea Klotzsch, Linnaea **8**: 481. 1833. (Type from the East Indies.)
? *Trametes bicolor* Berk. Trans. Linn. Soc. **16**: 43. 1878. (Type from the island of Aru.)
Polystictus Persoonii Cooke, Grevillea **14**: 85. 1886.
Trametes nitida Pat. Jour. de Bot. **4**: 17. 1890. (Type from Tonkin.)
Earliella cubensis Murrill, Bull. Torrey Club **32**: 479. 1905. (Type from Herradura, Cuba.)

Pileus annual, often reviving, semi-resupinate, laterally extended, conchate, imbricate, 3–6 × 5–15 × 0.2–0.5 cm.; surface thinly encrusted, glabrous, rugose, zonate, dark reddish-brown behind, or leaving a white marginal band 3–12 mm. in width; margin tumid, at length thin, undulate or lobed, fertile: context white, coriaceous, concentrically zonate; tubes 2–3 mm. long, 2–4 to a mm., white within, the mouths deep reddish flesh-colored fading to white, dissepiments at first thick, at length becoming thin and irregular with wavy edges: spores ellipsoidal, smooth, hyaline, 3–4 × 5–6 μ; cystidia none.

TYPE LOCALITY: East Indies.
HABITAT: Dead deciduous wood.
DISTRIBUTION: In all tropical regions.

DOUBTFUL SPECIES

Polyporus rudis Lév. Ann. Sci. Nat. III. **5**: 133. 1846. *Polyporus subfulvus* Cooke, Trans. Bot. Soc. Edinb. **13**: 153. 1878. Collected on trunks in Guadeloupe by L'Herminier. The description suggests faded specimens of *E. corrugata*.

33. **RIGIDOPORUS** Murrill, Bull. Torrey Club **32**: 478. 1905.

Hymenophore annual, at times reviving, epixylous, sessile, dimidiate to circular, simple or imbricate; surface pelliculose, multizonate, margin thin, incurved when dry: context thin, white, fleshy-corky, very rigid when dry; tubes minute, regular, light-colored, mouths usually pruinose when young: spores smooth, hyaline.

Type species, *Polyporus micromegas* Mont.

Pileus effused, very narrowly reflexed. — 1. *R. microstomus.*
Pileus circular, fixed at the center. — 2. *R. evolutus.*
Pileus normally expanded, dimidiate or fan-shaped, sometimes decurrent.
  Tubes very short, 0.5–1.5 mm. long.
    Pileus latericeous to bay with isabelline lines; tubes 6–7 to a mm. — 3. *R. substereinus.*
    Pileus bay to blackish; tubes 10 to a mm. — 4. *R. Liebmanni.*
  Tubes rather slender, 2–4 mm. long.
    Edges very obtuse. — 5. *R. contrarius.*
    Edges thin. — 6. *R. surinamensis.*

1. **Rigidoporus microstomus** (Berk. & Curt.) Murrill.

Polyporus microstomus Berk. & Curt. Jour. Linn. Soc. **10**: 309. 1868.

Pileus effused, laterally connate, very shortly reflexed, 1–4 × 1–1.5 × 0.2–0.4 cm., the reflexed portion very narrow, latericeous, finely pubescent to glabrous, faintly zonate, with a thin, undulate or slightly lobed, yellowish-white margin: context very thin, white, fibrous; tubes long and slender, 2–3 mm., white within, mouths minute, 7 to a mm., ochraceous or flesh-colored, edges obtuse, entire: spores not examined.

TYPE LOCALITY: Cuba.
HABITAT: Dead wood.
DISTRIBUTION: Known only from the type locality.

2. **Rigidoporus evolutus** (Berk. & Curt.) Murrill.

Polyporus evolutus Berk. & Curt. Jour. Linn. Soc. **10**: 308. 1868.

Pileus fleshy-tough, rigid when dry, circular, fixed at the center, 1–2.5 cm. broad, 1–2 mm. thick; surface multizonate, radiate-rugose, tomentose to resinous-glabrous, latericeous, with ochraceous blotches, black behind; margin thin, acute, undulate to slightly lobed, ochraceous: context very thin, pallid, fibrous; tubes pallid, 1–1.5 mm. long, mouths

minute, 7 to a mm., subcircular, edges white to yellowish-discolored, thin, dentate: spores not examined.

TYPE LOCALITY: Cuba.
HABITAT: Dead trees.
DISTRIBUTION: Known only from the type locality.

3. **Rigidoporus substereinus** Murrill, sp. nov.

Pileus thin, coriaceous, rigid and inflexed when dry, dimidiate, attached by a narrow base, applanate, 1–3 × 1.5–5 × 0.1–0.2 cm.; surface smooth, shining, glabrous, conspicuously zonate, radiate-rugose, latericeous to bay, with isabelline lines, much resembling a *Stereum*; margin very thin, smooth, cremeous, broadly sterile below, sharply inflexed on drying: context exceedingly thin, white, fibrous; tubes minute, 0.5–1.5 mm. long, white to pallid within, mouths very even, regular, angular, inconspicuous, 6–7 to a mm., edges thin, entire, whitish-pruinose to ochraceous or pale flesh-colored: spores smooth, hyaline.

Type collected at the base of El Yunque, Cuba, on dead sticks in woods, March, 1903, *L. M. Underwood & F. S. Earle 1211.*
DISTRIBUTION: Cuba; British Honduras.

4. **Rigidoporus Liebmanni** (Fries) Murrill.

Polyporus Liebmanni Fries, Nov. Symb. 59. 1851.
Polyporus stereinus Berk. & Curt. Jour. Linn. Soc. **10**: 308. 1868. (Type from Cuba.)

Pileus fleshy to woody, hard and horny when dry, thin, flabelliform or obovate, sessile, convex, 1.5–2 × 2–3 × 0.2–0.4 cm.; surface multizonate, glabrous, bay or blackish, often rugose behind; margin thin, entire, pallid, sterile, inflexed when dry: context very thin, white, fibrous, brown and very fragile in type specimens; tubes slender, 1–1.5 mm. long, white to pallid within, mouths whitish-pruinose to yellowish-brown, subcircular, inconspicuous, even, regular, 10 to a mm., edges thin, entire: spores ovoid, smooth, hyaline.

TYPE LOCALITY: Mirador, Mexico.
HABITAT: Dead wood.
DISTRIBUTION: Mexico, Cuba, and Porto Rico.

5. **Rigidoporus contrarius** (Cooke) Murrill.

Fomes contrarius Cooke, Grevillea **15**: 21. 1886.

Pileus attached by the vertex, subcircular to dimidiate, applanate, fleshy-corky, rigid when dry, 3–6 × 5–11 × 0.3–0.5 cm.; surface ochraceous, soon becoming brown, zonate, tomentose, at length glabrous, slightly concentrically sulcate; margin thin, entire or undulate, sterile, ochraceous, easily bruised: context thin, fibrous-corky, pallid, 1–3 mm. thick; tubes pallid, 2–4 mm. long, mouths circular, regular, white to discolored, 5 to a mm., edges very obtuse, entire, glistening: spores smooth, hyaline.

TYPE LOCALITY: Cuba.
HABITAT: Dead trunks.
DISTRIBUTION: Cuba.

6. **Rigidoporus surinamensis** (Miq.) Murrill, Bull. Torrey Club **34**: 473. 1907.

? *Polyporus detonsus* Fries, Linnaea **5**: 519. 1830. (Type from Brazil.)
Polyporus surinamensis Miq. Bull. Sci. Phys. Nat. Néerl. **1839**: 454. 1839.
? *Polyporus inconspicuus* Miq. Bull. Sci. Phys. Nat. Néerl. **1839**: 454. 1839. (Type from Guiana.)
Polyporus micromegas Mont. Pl. Cell. Cuba 423. 1842. (Type from Cuba.)
Polyporus zonalis Berk. Ann. Mag. Nat. Hist. **10**: Suppl. 375. 1843. (Type from Ceylon.)
Polyporus plumbeus Lév. Ann. Sci. Nat. III. **5**: 136. 1846. (Type from Guadeloupe.)
Polystictus rufopictus Cooke, Grevillea **15**: 23. 1886. (Type from Cuba.)
Rigidoporus micromegas Murrill, Bull. Torrey Club **32**: 478. 1905.

Pileus imbricate-multiplex, laterally connate, sessile, dimidiate or reniform, fleshy-corky, rigid when dry, convex or applanate, 2–3 × 2.5–5 × 0.3–0.6 cm.; surface multizonate, smooth or rugulose, pruinose to glabrous, isabelline to latericeous; margin acute, thin, inflexed, entire or undulate, often obtuse with age: context very thin, white, fibrous, 1–2 mm. thick; tubes white, 2–4 mm. long, slender, mouths minute, circular to angular, regu-

lar, even, 6 to a mm., edges thin, entire, white to pallid, becoming discolored with age: spores globose, smooth, hyaline, 3–4.5 μ; hyphae difform, varying from 2 to 9 μ.

TYPE LOCALITY: Surinam.
HABITAT: Water-soaked trunks of broad-leaved trees.
DISTRIBUTION: Tropical America and Gulf States.
ILLUSTRATION: Berk. *loc. cit. pl. 10, f. 5.*

34. **PORODISCULUS** Murrill.

Enslinia Fries, Summa Veg. Scand. 399. 1849. Not *Enslinia* Reichenb. 1827.
Porodiscus Murrill, Bull. Torrey Club 30: 432. 1903. Not *Porodiscus* Grev. 1863.

Hymenophore small, annual, tough, epixylous, erumpent from the lenticels of dead branches: stipe attached to the vertex of the pileus, usually curved at maturity: context white, fibrous, tubes cylindrical, short, one-layered, mouths constricted: spores globose, smooth, hyaline.

Type species, *Peziza pendula* Schw.

1. **Porodisculus pendulus** (Schw.) Murrill.

Peziza pendula Schw. Schr. Nat. Ges. Leipzig 1: 92. 1822.
Sphaeria pocula Schw. Proc. Acad. Phila. 4: 189. 1832. (Type f om New York.)
Polyporus cupulaeformis Berk. & Curt. Grevillea 1: 38. 1872. (Type from South Carolina.)
Porodiscus pendulus Murrill, Bull. Torrey Club 30: 433. 1903.

Pilei gregarious, erumpent from the lenticels of dead branches. Pileus very small, turbinate-cup-shaped, attached at the vertex, soon decurved and pendant, 1–2 mm. broad, 3–5 mm. long; surface anoderm, azonate, smooth, umbrinous, uniformly covered with a brown powder, often ashy-white with age; margin inflexed, concolorous, sterile: context white, fibrous, very thin; tubes very short, annual, white within, mouths circular, constricted, white, pruinose, becoming concolorous, 6–7 to a mm., edges entire: spores globose, smooth, hyaline, 4 μ: stipe 2 mm. or less in length, vertically attached, gradually expanding into the pileus, which it resembles in surface and context.

TYPE LOCALITY: North Carolina.
HABITAT: Fallen dead twigs and branches of chestnut, oak, hickory, ash, sumac, red cedar, etc.
DISTRIBUTION: Connecticut to Florida, Missouri, and Nicaragua.
EXSICCATI: Ellis & Ev. N. Am. Fungi *308*; Rav. Fungi Am. *210*; Rab.-Wint. Fungi Eur. *3328*; Rav. Fungi Car. 1: *10*; Ellis & Ev. N. Am. Fungi *2728*.
ILLUSTRATION: Jour. Linn. Soc. 20: *pl. 47*.

35. **HEXAGONA** Pollini, Pl. Nov. 35. 1816.

Hymenophore small, annual, epixylous, flabelliform to reniform, rarely circular, stipitate, the stipe sometimes much reduced; surface smooth or tessellate; margin thin: context thin, white, fibrous, fleshy to tough, usually fragile when dry; hymenium of radiating rows of large, thin-walled, hexagonal tubes, usually radially elongate: spores smooth, hyaline.

Type species, *Hexagona Mori* Pollini.

Tubes unequally hexagonal, the radial walls longer.
  Pileus white or nearly so.
    Surface of pileus not distinctly tomentose.
      Pileus reniform at maturity, stipe usually much reduced; species not tropical.
        Tubes large; surface of pileus decorated with imbricated reddish-brown fibrils, which disappear with age. — 1. *H. alveolaris.*
        Tubes much smaller, the mouths rarely over 1 mm. long and 0.5 mm. broad; surface of pileus glabrous. — 2. *H. striatula.*
      Pileus flabelliform, stipe usually very distinct, equaling the pileus at times in length; species tropical.
        Stipe 5–10 mm. in diameter.
          Tubes 1 mm. in length. — 3. *H. princeps.*
          Tubes 3–6 mm. in length. — 4. *H. pseudoprinceps.*
        Stipe 1–3 mm. in diameter.
          Pileus 3 cm. or less in diameter.
            Tubes flesh-colored, 2 mm. wide. — 5. *H. Maxoni.*
            Tubes pallid, 1 mm. wide. — 6. *H. floridana.*
          Pileus 4 cm. or more in diameter.
            Margin entire, often pellucid. — 7. *H. daedalea.*
            Margin ciliate or denticulate.

Surface minutely checkered. 8. *H. tessellatula.*
Surface not checkered. 9. *H. fragilis.*
Surface of pileus distinctly tomentose. 10. *H. reniformis.*
Context thin, translucent.
Context thick, opaque. 11. *H. subcaperata.*
Surface tessellate; stipe distinct. 12. *H. caperata.*
Surface not tessellate; stipe a mere tubercle.
Pileus purple or brown.
Pileus purple or purplish-brown; stipe lateral or excentric. 13. *H. subpurpurascens.*
Pileus subcircular; stipe excentric, tubes 2.5 mm. long. 14. *H. purpurascens.*
Pileus spatulate; stipe lateral, tubes 1.5 mm. long.
Pileus brown; stipe distinctly central. 15. *H. portoricensis.*
Margin entire. 16. *H. hondurensis.*
Margin ciliate.
Tubes equally hexagonal. 17. *H. indurata.*
Pileus purple.
Pileus yellow or brown. 18. *H. brunneola.*
Tubes merulioid. 19. *H. cucullata.*
Tubes of normal length.

1. **Hexagona alveolaris** (DC.) Murrill, Bull. Torrey Club **31**: 327. 1904.

Merulius alveolaris DC. Fl. Fr. **6**: 43. 1815.
Hexagona Mori Pollini, Pl. Nov. 35. 1816. (Type from Europe.)
Cantharellus alveolaris Fries, Syst. Myc **1**: 322. 1821.
Boletus arcularius Schw. Schr. Nat. Ges. Leipzig **1**: 95. 1822.
Favolus canadensis Klotzsch, Linnaea **7**: 197. 1832. (Type from Canada.)
? *Favolus Boucheanus* Klotzsch, Linnaea **8**: 316. *pl. 5. f. 2.* 1833. (Type from Europe.)
Favolus europaeus Fries, Epicr. Myc. 498. 1838. (Type from Europe.)
Polyporus Boucheanus peponinus Berk. & Curt. Ann. Mag. Nat. Hist. II. **12**: 432. 1853. (Type from South Carolina.)
Favolus ohiensis Berk. & Mont.; Mont. Syll. Crypt. 171. 1856. (Type from Ohio.)
Favolus alveolaris Quél. Ench. Fung. 185. 1886.—Fairman, Proc. Rochester Acad. Sci. **2**: 162. 1895.

Pileus reniform to circular, convex-plane, depressed behind, 3–4 × 5–7 × 0.2–0.5 cm.; surface at first fulvous, strigose-squamose, at length pallid and almost glabrous; margin at first thin, entire, incurved, becoming thicker and undulate or lobed: context white, opaque, 1–2 mm. thick; tubes decurrent, white to pallid, 2–4 mm. long, mouths 1–1.5 × 2–3 mm., edges thin, rigid, dentate: spores ellipsoidal, smooth, hyaline, 10–14 × 4–4.5 μ: stipe usually a lateral tubercle, at times excentric or central, varying in length.

TYPE LOCALITY: Southern France.
HABITAT: Fallen branches and other forms of dead deciduous wood.
DISTRIBUTION: North America; also in Europe.
ILLUSTRATION: Pollini, *loc. cit. pl. 2, 3.*
EXSICCATI: Underw. & Cook, Illust. Fungi *17;* Ellis & Ev. N. Am. Fungi *604.*

2. **Hexagona striatula** (Ellis & Ev.) Murrill.

Favolus striatulus Ellis & Ev. Am. Nat. **31**: 339. 1897.
Hexagona micropora Murrill, Bull. Torrey Club **31**: 328. 1904. (Type from Bar Harbor, Maine.)

Pileus flabelliform to reniform or rarely circular, convex, usually umbilicate or depressed behind, 2–4 × 2.5 × 0.2–0.4 cm.; surface smooth, glabrous, straw-colored to cream-colored; margin acute, undulate or slightly lobed, rarely reflexed, irregularly denticulate, dark-brown, as if scorched: context white, 1–2 mm. thick; tubes decurrent, ochraceous, 1–2 mm. long, mouths 4–6-angled, 0.3–0.5 × 0.6–1 mm., edges rather firm, beset with small, sharp teeth: spores ellipsoidal, smooth, hyaline, 3 × 9 μ: stipe lateral to excentric, rarely central, slightly enlarged below, concolorous, minutely tomentose to subglabrous, 1–7 mm. long, 3–5 mm. thick.

TYPE LOCALITY: Mt. Cuba, Delaware, on dead branches in woods.
HABITAT: Dead trunks and fallen sticks of birch, beech and other deciduous trees.
DISTRIBUTION: Canada and the Northern United States south to Delaware and west to Wisconsin.

3. **Hexagona princeps** (Berk. & Curt.) Murrill, Bull. Torrey Club **31**: 329. 1904.

Favolus princeps Berk. & Curt. Jour. Linn. Soc. **10**: 321. 1868.

Pileus reniform, convex, 9 × 6 × 0.4–0.6 cm.; surface fulvous, finely tomentose, smooth; margin thin, entire or undulate, inflexed when dry: context fleshy-tough, white, opaque;

tubes decurrent, fuscous when dry, 1 mm. long, 4–6-angled, mouths 1 × 1.5 mm., edges thin, dentate: spores ellipsoidal, smooth, hyaline: stipe lateral, tapering downward, fulvous, velvety, 3 cm. long, 1–5 cm. thick.

TYPE LOCALITY: Cuba.
HABITAT: Dead wood.
DISTRIBUTION: Known only from the type locality.

4. **Hexagona pseudoprinceps** Murrill, sp. nov.

Pileus reniform, convex, depressed behind, 3.5 × 4.5 × 0.5–1 cm.; surface glabrous, delicately radiate-striate, discolored on drying; margin thick, entire, strongly inflexed when dry: context fleshy-tough, white, opaque; tubes decurrent, white, discolored on drying, 3–6 mm. long, 4–6-angled, mouths 1 × 2 mm., sometimes confluent in age, edges thin, entire or slightly toothed: spores ellipsoidal, smooth, hyaline: stipe excentric to lateral, concolorous, glabrous, or slightly hispid, 5 mm. long, 7 mm. thick.

Type collected on dead wood, at Carmelita, Porto Rico, *F. S. Earle 172*.
DISTRIBUTION: Known only from the type locality.

5. **Hexagona Maxoni** Murrill, sp. nov.

Pileus irregularly reniform, applanate, 1–2 × 1.5–3 × 0.1 cm.; surface glabrous, tessellate, straw-colored on drying; margin thin, denticulate, undulate to lobed: context fleshy-tough, membranous, white, opaque; tubes slightly decurrent, darker than the pileus, with a tinge of flesh-color, 0.5–1.5 mm. long, 4–6-angled, mouths 1.5 × 2–3 mm., smaller near the margin, edges thin, entire or undulate: spores ellipsoidal, smooth, hyaline: stipe lateral, tapering, concolorous, glabrous, 2–3 mm. long, 1–2 mm. thick, not umbilicate above.

Type collected on a rotten branch in the forest, near Secanquim, Guatemala, 550 meters, January 7, 1905, *W. R. Maxon & R. H. Hay 3207*.
DISTRIBUTION: Known only from the type locality.

6. **Hexagona floridana** Murrill, Bull. Torrey Club **31**: 330. 1904.

Pileus flabelliform, applanate, depressed behind, 2 × 2.5–3 × 0.2 cm.; surface finely hispid, pure white, becoming straw-colored on drying, faintly radiate-striate; margin slightly undulate, tessellate at times, fringed with numerous slender cilia: context very thin, white, membranous, wholly translucent; tubes decurrent, white, becoming ochraceous, 1.5–2 mm. long, normally hexagonal, mouths 0.5–1 × 2–3 mm., not radially confluent, edges thin, fimbriate: spores ellipsoidal, smooth, hyaline, 9 × 4 μ: stipe lateral, subequal, scutate at the base, concolorous, hispid, 2–5 mm. long, 1–2 mm. thick, always umbilicate above.

TYPE LOCALITY: Miami, Florida.
HABITAT: Old logs in rich woods.
DISTRIBUTION: Known only from the type locality.

7. **Hexagona daedalea** (Link) Murrill, Bull. Torrey Club **31**: 328. 1904.

Merulius daedaleus Link, Dissert. 1: 37. 1795.
Daedalea brasiliensis Fries, Syst. Myc. 1: 332. 1821. (Type from Brazil.)
Favolus brasiliensis Fries, Elench. Fung. 44. 1828.—Linnaea 5: 511. 1830.
? *Favolus guadalupensis* Lév. Ann. Sci. Nat. III. 5: 144. 1846. (Type from Guadeloupe.)
Favolus Friesii Berk. & Curt. Jour. Linn. Soc. 10: 321. 1868. (Type from Costa Rica.)
Favolus hispidulus Berk. & Curt. Jour. Linn. Soc. 10: 321. 1868. (Type from Cuba.)
Hexagona Wilsonii Murrill, Bull. Torrey Club 31: 329. 1904. (Type from the Luquillo mountains, Porto Rico.)

Pileus spatulate-obovate to reniform, applanate, usually attenuate behind, 4–8 × 2–6 × 0.1–0.3 cm.; surface white when fresh, radiate-striate, finely tomentose to glabrous, hispid behind, tessellate near the margin, which is thin, often pellucid, undulate, at times fimbriate, lobed or fissured with age: context fleshy, fragile when dry, white, often partially translucent; tubes decurrent, concolorous, 1–2 mm. long, 4–6-angled, mouths very variable in size, 1–2.5 × 3–7 mm., smaller near the margin, edges thin, but apparently firm, at length splitting into irregular teeth: spores ellipsoidal, smooth, hyaline, 9–12 × 4–5 μ:

stipe lateral, concolorous, hispid-tomentose, 0.5–1 cm. long, 2–5 mm. thick, usually dilated at the base.

TYPE LOCALITY: Brazil.
HABITAT: Fallen trunks and other decayed timber.
DISTRIBUTION: Gulf States and tropical America.
ILLUSTRATION: Linnaea 5: *pl. 11. f. 1.*

8. **Hexagona tessellatula** Murrill, Bull. Torrey Club 31: 330. 1904.

Pileus flabelliform, convex, depressed behind, 1–3 × 2–4 × 0.2 cm.; surface delicately and closely tessellate, finely hispid, becoming glabrous, white, yellowish when dry; margin thin, denticulate, slightly incurved when dry, frequently brown and hygrophanous: context white, membranous, translucent; tubes decurrent, white, 2 mm. long, 4–6-angled, mouths 1 × 3 mm., at length radially confluent, edges thin, lacerate: spores ellipsoidal, smooth, hyaline, 2-guttulate, 3 × 10 μ: stipe lateral, short, slightly enlarged below, concolorous, hispid, 3–5 mm. long, 2–3 mm. thick, usually umbilicate above.

TYPE LOCALITY: Cuba.
HABITAT: Dead wood.
DISTRIBUTION: Known only from the type locality.

9. **Hexagona fragilis** Murrill, Bull. Torrey Club 31: 329. 1904.

Pileus flabelliform, convex, depressed behind, 2–3 × 2–4 × 0.1–0.3 cm.; surface densely hispid, especially behind, faintly radiate-striate, pure white, becoming straw-colored in dying; margin quite thick for the genus, nearly regular in outline, usually inflexed when dry, partly hygrophanous at times, beset with short, fimbriate, fugacious hairs: context thin, white, partially translucent, quite fragile when dry; tubes decurrent, white, 2–3 mm. long, 4–6-angled, mouths 1 × 4 mm., becoming radially confluent and gill-like, edges thin, lacerate, the divisions fimbriate: spores ellipsoidal, smooth, hyaline, 4–5 × 10 μ: stipe lateral, subequal, concolorous, hispid, short, 5 mm. long, 2.5 mm. thick, rarely umbilicate above.

TYPE LOCALITY: Jamaica.
HABITAT: Fence-posts of *Chrysophyllum.*
DISTRIBUTION: Jamaica.

10. **Hexagona reniformis** Murrill, sp. nov.

Pileus reniform, slightly convex, 2–4 × 2–4.5 × 0.2–0.4 cm.; surface densely tomentose, tessellate near the margin, pallid, yellowish-brown on drying; margin undulate, rather thick, entire: context fleshy-tough, membranous, white, partially translucent; tubes not decurrent, white, becoming yellowish-brown on drying, 1–2 mm. long, 4–6-angled, mouths 1.5 × 2–2.5 mm., edges entire: spores ellipsoidal, smooth, hyaline: stipe lateral, equal, concolorous or lighter, tomentose, 0.5–1 cm. long, 2.5–5 mm. thick, not umbilicate above.

Type collected on decayed deciduous wood, in hammocks near the homestead trail, Florida, May, 1904, *J. K. Small & P. Wilson 2067.*
DISTRIBUTION: Known only from the type locality.

11. **Hexagona subcaperata** Murrill, sp. nov.

Pileus flabelliform, convex, somewhat attenuate and depressed behind, 4–6 × 5–8 × 0.3–0.5 cm.; surface distinctly tomentose, pale-ochraceous, rather coarsely checkered; margin abruptly acute, entire, often brownish and much deflexed when dry: context white, thin, opaque; tubes decurrent, white when fresh, discolored on drying, 3–4 mm. long, mouths large and angular, 1–1.5 × 2–2.5 mm., often radially confluent with age, much contorted on drying, edges thin, lacerate, the divisions fimbriate: spores ellipsoidal, smooth, hyaline: stipe lateral, slightly tapering downward, lighter than the pileus in dried specimens, minutely tomentose, 1 cm. long, 5 mm. thick, neither umbilicate above nor scutate below.

Type collected on dead logs at Port Antonio, Jamaica, November 24, 1902, *F. S. Earle 622.*
DISTRIBUTION: Jamaica.

12. **Hexagona caperata** (Pat.) Murrill, Bull. Torrey Club **31**: 331. 1904.

Favolus caperatus Pat. Bull. Soc. Myc. Fr. 18: 171. 1902.

Pileus convex, attenuate at the base; surface striate, pallid to reddish-brown, with a conspicuous covering of short grayish hairs, which partly disappear with age; margin more or less incised or lobed, deflexed, neither ciliate nor tessellate: context fleshy, white; tubes deep, white, angular, concolorous, with large, soft, fleshy, fimbriate dissepiments: spores ovoid-cylindrical, smooth, hyaline, 10–12 × 5 μ; cystidia none: stipe wanting, or a mere rounded lateral tubercle.

TYPE LOCALITY: Guadeloupe.
HABITAT: Dead trunk of *Brysonima spicata*.
DISTRIBUTION: Known only from the type locality.

13. **Hexagona subpurpurascens** Murrill, sp. nov.

Pileus subcircular, convex, depressed at the center, 1–1.5 × 1–1.5 × 0.1–0.2 cm.; surface reddish-brown with purple areoles, subpruinose to glabrous; margin very thin, entire, strongly inflexed on drying: context fleshy-tough, membranous, white, opaque; tubes decurrent, white, 1–1.5 mm. long, 4–6-angled, mouths 1 × 1.5 mm., edges thin, entire: spores ellipsoidal, smooth, hyaline: stipe excentric, slightly tapering, white, 0.5–1 cm. long, 1.5 mm. thick.

Type collected on dead sticks in woods at Mooretown, Jamaica, November 22, 1902, *F. S. Earle 557*.

DISTRIBUTION: Known only from the type locality.

14. **Hexagona purpurascens** (Berk. & Curt.) Murrill, Bull. Torrey Club **31**: 331. 1904.

Favolus purpurascens Berk. & Curt. Jour. Linn. Soc. **10**: 321. 1868.

Pileus spatulate to flabelliform, 1.5–2.5 × 1–4 × 0.1–0.3 cm.; surface lurid-purple, glabrous; margin thin, entire, incurved when dry: context fleshy-tough, white, opaque; tubes decurrent to the base of the stipe, lighter than the pileus, 2 mm. long, 4–6-angled, mouths 1–1.5 × 2–2.5 mm., edges thin, becoming lacerate: spores ellipsoidal, smooth, hyaline: stipe lateral, equal, more or less hispid, 4 mm. long, 1–2 mm. thick.

TYPE LOCALITY: Cuba.
HABITAT: Trunks of trees.
DISTRIBUTION: Known only from the type locality.

15. **Hexagona portoricensis** Murrill, Bull. Torrey Club **31**: 331. 1904.

Pileus centrally stipitate, circular, deeply umbilicate, 4 × 0.3 cm.; surface subglabrous, umbrinous, the center concolorous; margin entire, not very thin, much inflexed when dry: context white, fibrous, 1 mm. thick, opaque; tubes somewhat decurrent, white, 2 mm. long, 4–6-angled, mouths 1 × 3 mm., smaller and more regular near the margin, edges thin, fimbriatulate: spores ellipsoidal, smooth, hyaline, 2-guttulate, 3–5 × 8–10 μ: stipe central, compressed, slightly tapering downward, subconcolorous, minutely tomentose, 2 cm. long, 4 mm. thick.

TYPE LOCALITY: Porto Rico.
HABITAT: Decaying wood in the mountains.
DISTRIBUTION: Known only from the type locality.

16. **Hexagona hondurensis** Murrill, Bull. Torrey Club **31**: 331. 1904.

Pileus centrally stipitate, circular, slightly umbilicate, 2–4 × 0.05 cm.; surface faintly radiate-striate, subglabrous, fulvous, the center fuliginous; margin thin, regular, tessellate, inflexed when dry, fringed with numerous short, fugacious cilia: context white, fibrous, 0.25 mm. thick, translucent near the margin; tubes adnate, white, 0.3 mm. long, hexagonal, radially elongate, mouths 1 × 2 mm., much smaller near the margin, edges

thin, subentire: spores ellipsoidal, smooth, hyaline, 3.5 × 9 μ: stipe central, equal, concolorous, pruinose to glabrous, 2–3 cm. long, 2 mm. thick.

TYPE LOCALITY: Honduras.
HABITAT: Dead logs near the coast.
DISTRIBUTION: Known only from the type locality.

17. **Hexagona indurata** (Berk.) Murrill, Bull. Torrey Club **31**: 332. 1904.

Favolus induratus Berk. Ann. Mag. Nat. Hist. II. **9**: 198. 1852.

Pileus reniform, slightly convex, attached by the vertex, 2.5 × 3 × 0.2–0.3 cm.; surface liver-colored, glabrous, usually tessellate; margin rather thick, entire: context fleshy-tough, white, opaque; tubes lighter than the pileus, subhexagonal, 1–1.5 mm. long, mouths 1 mm. or less in diameter, edges entire to toothed: spores ellipsoidal, smooth, hyaline.

TYPE LOCALITY: Hispaniola.
HABITAT: Dead wood.
DISTRIBUTION: Known only from the type locality.

18. **Hexagona brunneola** (Berk. & Curt.) Murrill, Bull. Torrey Club **31**: 331. 1904.

Favolus brunneolus Berk. & Curt. Jour. Linn: Soc. **10**: 321. 1868.

Pileus flabelliform, wedge-shaped behind, 2.5 × 2.5 × 0.1–0.2 cm.; surface brown, glabrous, rugulose when dry; margin thin, undulate or lobed: context fleshy-tough, membranous, white, opaque; tubes discolored, very short, much less than a mm., subhexagonal, mouths 1 mm. in diameter, edges entire: spores ellipsoidal, smooth, hyaline: stipe spurious or a mere lateral disc.

TYPE LOCALITY: Cuba.
HABITAT: Dead wood.
DISTRIBUTION: Known only from the type locality.

19. **Hexagona cucullata** (Mont.) Murrill, Bull. Torrey Club **31**: 332. 1904.

Favolus cucullatus Mont. Pl. Cell. Cuba 378. 1842.
Favolus curtipes Berk. & Curt. Jour. Bot. & Kew. Misc. 1: 234. 1849. (Type from Santee river, South Carolina.)
Hexagona Taxodii Murrill, Bull. Torrey Club. **31**: 332. 1904. (Type from Miami, Florida.)

Pileus reniform, convex, umbonate-sessile, 3–6 × 6–8 × 0.2 cm.; surface glabrous, often radiate-striate, cream-colored to ochraceous, plane, or marked with two or three broad undulations from center to margin, which is thin, entire, irregularly undulate or lobed and deflexed when dry: context fleshy-tough, white, homogeneous, 0.5 mm. thick; tubes ochraceous to dark-fulvous, hexagonal, not radially elongate, very variable in size, 1.5–3.5 mm. long, 1–3 mm. wide, edges thin, finely denticulate: spores ellipsoidal, smooth, hyaline, 14 × 7 μ, copious: stipe a mere scutate disk nearly a centimeter in breadth.

TYPE LOCALITY: Cuba.
HABITAT: Dead wood.
DISTRIBUTION: Southeastern United States and Tropical America.
ILLUSTRATION: Mont. Pl. Cell. Cuba *pl. 14, f. 2.*

DOUBTFUL SPECIES

Favolus velutipes Fries, Nov. Symb. 104. 1851. Oersted's outline drawing and notes which formed the basis of Fries' description are still to be seen at Copenhagen, but these are hardly sufficient to distinguish the species properly from its numerous congeners.

36. **MICROPORELLUS** Murrill, Bull. Torrey Club **32**: 483. 1905.

Hymenophore thin, annual, epixylous, usually flabelliform, stipitate, the stipe variously attached and sometimes much reduced; surface anoderm, multizonate: context thin, white, fibrous, rigid and fragile when dry; tubes very minute, regular, thin-walled, fragile when dry: spores smooth, hyaline.

Type species, *Polyporus dealbatus* Berk. & Curt.

Pileus white or pale-brown, unchanging.
  Tubes entire. 1. *M. dealbatus.*
  Tubes lacerate. 2. *M. unguicularis.*
Pileus ochraceous or sordid, becoming bay or black with age or on drying.
  Pileus ochraceous, becoming bay. 3. *M. porphyritis.*
  Pileus sordid, becoming black. 4. *M. holotephrus.*

1. **Microporellus dealbatus** (Berk. & Curt.) Murrill, Bull. Torrey Club 32 : 483. 1905.

Polyporus dealbatus Berk. & Curt. Ann. Mag. Nat. Hist. II. 12 : 432. 1853.
Polyporus mutabilis Berk. & Curt. Ann. Mag. Nat. Hist. II. 12 : 433. 1853.
Polyporus petaliformis Berk. & Curt. Jour. Linn. Soc. 10 : 307. 1868.
Polyporus polygrammus Berk. & Curt. Jour. Linn. Soc. 10 : 307. 1868.
Polyporus Ravenelii Berk. & Curt. Grevillea 1 : 38. 1872.
Polystictus cretatus Cooke, Trans. Bot. Soc. Edinb. 13 : 137. 1878.
Polyporus cervicornis Cooke, Grevillea 17 : 59. 1889. (Type from St. Lucia.)
Fomes bomfimensis P. Henn. Hedwigia 43 : 175. 1904. (Type from Bom Fim, Amazonas, Brazil.)

Pileus thin, coriaceous, slightly flexible but easily broken, flabelliform or spatulate, conchate, 2–6 × 3–7 × 0.1–0.2 cm. ; surface finely tomentose to glabrous, hirtose behind, radiate-striate, zonate, dealbate, the zones often light-fulvous ; margin very thin, sterile, sericeous, undulate to lobed or cleft, inflexed and often splitting when dry : context white, very thin, fibrous, fragile ; tubes white to isabelline within, scarcely a mm. in length, mouths minute, angular, 8–10 to a mm., edges thin, entire, glistening, whitish when young, becoming discolored : spores smooth, hyaline : stipe variable, often wanting, 0–7 cm. long, 2–7 mm. thick, scutate at the base, expanding into the pileus, laterally attached, rarely excentric, usually compressed, with surface and substance resembling that of the pileus.

TYPE LOCALITY : South Carolina.
HABITAT : Dead wood, especially buried wood.
DISTRIBUTION : Tropical America, and northward in the United States as far as Delaware and Missouri.
EXSICCATI : Rav. Fungi Am. *109 ;* Rav. Fungi Car. 3 : *10 ;* Ule, Myc. Bras. *47.*

2. **Microporellus unguicularis** (Fries) Murrill.

Polystictus unguicularis Fries, Nov. Symb. 76. 1851.

Pileus thin, coriaceous, reniform or flabelliform, attached by an attenuate base, 2–3 cm. broad, 1–3 mm. thick ; surface uniformly ochroleucous, very smooth, concentrically striate, radiate-lineate ; margin acute, incurved when dry : context very thin, less than 1 mm., fibrous, somewhat fragile, watery-white ; tubes 0.5–1 mm. long, pallid to yellowish, mouths irregular, angular, 2–4 to a mm., edges white to pallid, thin, fimbriate-dentate, at length lacerate : spores not examined.

TYPE LOCALITY : Mexico.
HABITAT : Dead trunks.
DISTRIBUTION : Known only from the type locality.

3. **Microporellus porphyritis** (Berk.) Murrill.

Polyporus porphyritis Berk. Jour. Bot. & Kew Misc. 8 : 196. 1856.

Pileus thin, coriaceous, flabelliform, 4–5 × 5–6 × 0.1–0.3 cm. ; surface pelliculose, ochraceous to light-bay, zonate, glabrous ; margin thin, ochraceous, undulate : context fibrous-corky, 1–1.5 mm. thick, pallid ; tubes short, less than 1 mm., mouths minute, 5–6 to a mm., pallid to discolored, very regular, subangular, edges thin, entire, at first obtuse, becoming acute : spores not examined : stipe variable, short, slightly lighter than the pileus, 5–10 mm. long, 5–8 mm. thick, resembling the pileus in surface and substance.

TYPE LOCALITY : Panuré, Brazil.
HABITAT : Dead wood.
DISTRIBUTION : Cuba ; also in Brazil.

4. **Microporellus holotephrus** (Berk. & Curt.) Murrill, Bull. Torrey Club 32 : 484. 1905.

Polyporus holotephrus Berk. & Curt. Jour. Linn. Soc. 10 : 315. 1868.

Pileus thin, coriaceous, fan-shaped, attenuate behind, laterally attached, 2–5 × 2–6 × 0.1 cm. ; surface conspicuously scabrous, tomentose, zonate, radiate-lineate, brown,

tinged with wine-color, becoming very blackish and opaque in type specimens; margin extremely thin, even or undulate: context tough, fibrous, very thin, discolored in type specimens; tubes extremely short, angular, 8 to a mm., edges thin, entire, white to discolored, nearly black in type specimens: spores not examined. stipe laterally attached, compressed, sometimes wanting, rarely over 2 cm. in length or 5 mm. in breadth, expanding into the pileus, which it resembles in surface and substance.

TYPE LOCALITY: Cuba.
HABITAT: Dead wood.
DISTRIBUTION: Cuba; reported also from Guiana.

37. POLYPORUS (Micheli) Paulet, Traité Champ. *pl. 13*. 1812?

Polyporus Adans. Fam. 2: 10; hyponym. 1763.
Polyporellus Karst. Medd. Soc. Faun. Fl. Fenn. 5: 37. 1879.
Leucoporus Quél. Ench. Fung. 165. 1886.
Cerioporus Quél. Ench. Fung. 167. 1886.
Melanopus Pat. Hymén. Eur. 137. 1887.

Hymenophore annual, epixylous, small and simple, very rarely large and compound: stipe central, excentric or lateral, much reduced at times in a few species, often partly or wholly brown or black; surface usually smooth, the margin at times ciliate: context white or yellowish, fibrous, tough to corky; hymenium porose, at times alveolate: spores smooth, hyaline.

Type species, *Polyporus Ulmi* Paulet.

Stipe pallid or light-brown, centrally attached, not darker than the pileus.
  Margin of pileus devoid of cilia.
    Pileus beset, especially near the margin, with hydnoid processes. 1. *P. hydniceps.*
    Pileus ornamented with conspicuous tufts of fibrils, which are larger and darker toward the center. 2. *P. fagicola.*
    Pileus plainly villose, tomentose or scabrous, often becoming glabrous with age.
      Pileus scabrous, irregular, umbrinous, margin involute; stipe scabrous; tubes small, 4 to a mm., dissepiments dentate. 3. *P. scabriceps.*
      Pileus villose or tomentose.
        Pileus becoming virgate from the rupture of the cuticle; tubes 2 to a mm., decurrent, dissepiments dentate. 4. *P. virgatus.*
        Pileus not becoming virgate.
          Pileus less than 2 cm. in diameter, ochraceous; tubes 2 to a mm., decurrent to the base of the stipe. 5. *P. delicatus.*
          Pileus more than 2 cm. in diameter.
            Tubes decurrent, very short, entire; pileus dark-purple, ornamented here and there with paler radiating lines, surface finely tomentose, becoming glabrous. 6. *P. dibaphus.*
            Tubes not decidedly decurrent, denticulate when mature; pileus yellowish to smoky-black, villose, at length glabrous; spores oblong, curved, $6 \times 2\mu$. 7. *P. Polyporus.*
Pileus minutely tomentose or glabrous from the first.
  Sporophore goblet-shaped; pileus less than 3 cm. broad, shallowly depressed at the center; stipe long, striate, expanding into the pileus. 8. *P. Tuba.*
  Sporophore trumpet-shaped; pileus 5–10 cm. broad, deeply infundibuliform; stipe 3 cm. long, pallid, puberulent. 9. *P. craterellus.*
  Sporophore not as above.
    Pileus minute, 2 mm. in diameter, umbilicate, margin involute; pores alveolar. 10. *P. Acicula.*
    Pileus large, 10 cm. or more in diameter.
      Surface umbrinous; stipe hispid; species tropical. 11. *P. discoideus.*
      Surface milk-white; stipe glabrous; species temperate. 12. *P. admirabilis.*
    Pileus of medium size, 2–5 cm. in diameter.
      Context golden-yellow, not extremely thin; tubes remote from the stipe. 13. *P. phaeoxanthus.*
      Context whitish or brownish in color.
        Pileus brown, polished; context light-brown, extremely thin; tubes decurrent. 14. *P. columbiensis.*
        Pileus white or pallid; context white.
          Stipe central.
            Pileus 1 mm. or less thick. 15. *P. obolus.*
            Pileus 5–10 mm thick. 16. *P. albiceps.*
          Stipe lateral. 17. *P. humilis.*
Margin of pileus ornamented with cilia, which often disappear with age.
  Tubes alveolar.
    Margin of pileus finely hispid, broadly sterile below, surface ochraceous, radiate-striate; stipe brown, pulverulent. 18. *P. aemulans.*

Margin of pileus strigose, fertile below.
Pileus very thin, smooth, pellucid, fragile ; stipe thicker below, setulose. 19. *P. arculariellus.*
Pileus very thin, concentrically rugose, opaque, less than 1 cm. in diameter ; stipe beset with sharp bristles. 20. *P. arculariformis.*
Pileus not very thin, fuscous-squamulose to glabrous ; stipe equal, grooved, squamulose, grayish-fuscous. 21. *P. arcularius.*
Tubes not aveolar.
Tubes very irregular ; stipe usually thick and polished ; pileus tough, umbilicate, yellowish-white with brown marginal band, cilia short, fugacious. 22. *P. variiporus.*
Tubes fairly regular ; stipe slender, not polished ; plants rather delicate, cilia variable in form and persistence.
Pileus opaque, not translucent, 1–4 cm. in diameter, cilia long, of uncertain duration ; plants mostly cespitose. 23. *P. Tricholoma.*
Pileus very thin, more or less translucent, 1–2 cm. in diameter, cilia short, slender, fugacious ; plants not cespitose. 24. *P. Cowellii.*
Stipe wholly or partly black or fuliginous, variously attached, usually darker than the pileus.
Pileus squamose, very large, flabelliform ; tubes large, alveolar. 25. *P. caudicinus.*
Pileus finely tomentose, drab-colored, with reddish-brown spots, small, circular ; tubes rounded, minute. 26. *P. maculosus.*
Pileus not as above.
Tubes reaching 0.5–1 mm. or more in diameter.
Stipe short, less than 1 cm. long ; pileus normal. 27. *P. Wrightii.*
Stipe usually very long, 1–15 cm. ; pileus sometimes aborted, resembling a *Xylaria*. 28. *P. marasmioides.*
Tubes much smaller, 4–10 to a mm.
Pileus 12–25 cm. in diameter, white or pallid. 29. *P. Underwoodii.*
Pileus rarely half this size and never white.
Surface light-colored, isabelline to pale-umbrinous.
Stipe central ; or excentric ; species confined to temperate regions. 30. *P. elegans.*
Stipe lateral ; species confined to tropical regions. 31. *P. subelegans.*
Surface dark-colored, bright-bay to almost black.
Stipe central ; pileus proliferous at times, surface glabrous ; species confined to tropical and South America. 32. *P. diabolicus.*
Stipe horizontal, usually lateral or excentric, rarely central in temperate species.
Stipe 2–6 cm. long ; pileus 5–20 cm. in diameter ; species abundant in temperate regions. 33. *P. fissus.*
Stipe 0.3–1 cm. long ; pileus 2–10 cm. in diameter ; species confined to the tropics.
Surface glabrous. 34. *P. Blanchetianus.*
Surface marked with rows of serrated black squamules. 35. *P. scabellus.*

1. **Polyporus hydniceps** Berk. & Curt. Jour. Linn. Soc. **10** : 305. 1868.

Pileus cup-shaped or irregularly broken up into flabelliform lobes, 3–4 × 0.1–0.2 cm. ; surface light-brown to bay, adorned with very prominent cylindrical or subpyramidal processes ; margin thin, irregular, undulate or lobed, inflexed : context pallid, fleshy, rigid and fragile when dry, about 1 mm. thick ; tubes decurrent, pallid to ochraceous, short, mouths subelliptical or circular, becoming angular, 4–6 to a mm., edges entire to dentate : spores smooth, hyaline : stipe central or excentric, short, thick, usually reticulate, brown to blackish, fleshy, 2 cm. long, 5–15 mm. thick.

TYPE LOCALITY : Cuba.
HABITAT : Dead wood.
DISTRIBUTION : Cuba.

2. **Polyporus fagicola** Murrill, Torreya **6** : 35. 1906.

Pileus circular, convex to plane, umbilicate, 4–5 × 0.1–0.3 cm. ; surface smooth, pale-avellaneous, ornamented with tufts of innate fibrils, which are larger and darker near the center and somewhat radially and imbricately arranged ; margin very sharp, slightly decurved, regular in outline, not ciliate : context thin, fibrous, white ; tubes milk-white, decurrent, favoloid, 1–2 to a mm., edges very thin, fimbriatulate : spores ellipsoid, smooth, hyaline, 3–4 × 6–7 μ : stipe central, solid, thick, nearly equal, concolorous, conspicuously hispid, especially near the base, 2 cm. long, 1 cm. thick.

TYPE LOCALITY : Boarstone Mountain, Piscataquis County, Maine.
HABITAT : Fallen decorticated beech trunk.
DISTRIBUTION : Known only from the type locality.

3. **Polyporus scabriceps** Berk. & Curt. Jour. Linn. Soc. **10**: 305. 1868.

Pileus irregularly circular in outline, slightly convex, 3–5 × 0.3 cm.; surface umbrinous, minutely and evenly scabrous, appearing spuriously porose; margin irregular, involute, 3–4 mm. of it being rolled inward: context soft-corky, pale yellowish-brown; tubes decurrent, pallid, dark yellowish-brown when dry, mouths irregular, 4 to a mm., edges thin, dentate: spores smooth, hyaline: stipe central, short, even, lighter than the pileus, scabrous, tough, 2 cm. long, 5–6 mm. thick.

TYPE LOCALITY: Cuba.
HABITAT: Dead wood.
DISTRIBUTION: Known only from the type locality.

4. **Polyporus virgatus** Berk. & Curt. Jour. Linn. Soc. **10**: 304. 1868.

Pileus circular, depressed at the center, 3.5–6 × 0.2–0.3 cm.; surface rufous when dry, tomentose to glabrous, at length virgate from the rupture of the cuticle; margin thin, acute, inflexed when dry: context firm, fibrous, pale-brown, 1–2 mm. thick; tubes decurrent, fragile, dark yellowish-brown when dry, 1–1.5 mm. long, mouths angular, somewhat irregular, 2–3 to a mm., slightly concentrically confluent, edges thin, conspicuously dentate: spores smooth, hyaline: stipe central, nearly equal, concolorous or darker at the base, smooth like the pileus, firm and tough, 1.5–2.5 cm. long, 5–10 mm. thick.

TYPE LOCALITY: Cuba.
HABITAT: On dead wood.
DISTRIBUTION: Cuba.

5. **Polyporus delicatus** Berk. & Curt. Grevillea **1**: 37. 1872.

Pileus circular, irregular, 1.5 × 1.25 × 0.1–0.3 cm.; surface ochraceous, very smooth, evenly tomentose; margin thin, acute, undulate, inflexed: context pallid, soft and elastic; tubes decurrent to the base, concolorous, mouths angular, 2 to a mm., pale yellowish-orange when dry, dissepiments thin, quite collapsed in the single type specimen: spores not examined: stipe central, short, concolorous above, hard, black and radicate below.

TYPE LOCALITY: Alabama.
HABITAT: On dead wood.
DISTRIBUTION: Known only from the type locality.

6. **Polyporus dibaphus** Berk. & Curt. Grevillea **1**: 36. 1872.

Pileus circular, regular, convex, 2.5–3 × 0.05–0.1; surface dark-purple, finely tomentose, becoming glabrous, marked here and there with pale radiating lines; margin thin, acute, entire, fertile: context white, membranous; tubes decurrent, ochraceous, very short, mouths angular, 4–5 to a mm., edges thin, becoming dentate: spores not examined: stipe central, slender, even, slightly darker, rough, pruinose below, 3 cm. long, 3 mm. thick.

TYPE LOCALITY: Alabama.
HABITAT: On dead wood.
DISTRIBUTION: Known only from the type locality.

7. **Polyporus Polyporus** (Retz.) Murrill, Bull. Torrey Club **30**: 33. 1904.

Boletus Polyporus Retz. Sv. Vet.-Acad. Handl. 1769: 253. 1769.
Boletus brumalis Pers. Neues Mag. Bot. 1: 107. 1794.
Polyporus luridus Berk. & Curt. Grevillea 1: 37. 1872.

Pileus circular, convex to plane, slightly umbilicate at times, 2–8 × 0.2–0.4 cm.; surface fuliginous, more rarely yellowish-brown, hispid-squamulose to minutely hispid; margin at first inflexed, thin, fimbriate, often becoming wavy or lobed: context milk-white, membranous, 1–3 mm. thick; tubes adnate, white to pallid, 1–2 mm. long, cylindrical, mouths circular, regular, 2–3 to a mm., edges at first thick, becoming thin and often dentate with age: spores cylindrical, subcurved, hyaline, 7–8 × 2–3 μ: stipe central, solid, woody, equal, squamulose, avellaneous, not black at the base, 2–3 cm. long, 3–7 mm. thick.

TYPE LOCALITY: Europe.
HABITAT: Decayed fallen branches, stumps and roots of various deciduous trees.
DISTRIBUTION: North America and Europe; more abundant in the northern portions.

ILLUSTRATION: Bull. Herb. Fr. *pl. 469.*
EXSICCATI: Ellis, N. Am. Fungi *914;* Shear, N. Y. Fungi *305;* Underw. & Cook, Illust. Fungi *12;* Karst. Finl. Fungi *114;* Sydow, Myc. Mar. *1410.*

8. **Polyporus Tuba** Berk. & Curt. Jour. Linn. Soc. **10**: 305. 1868.

Pileus cup-shaped, like a *Peziza*, with a very long stipe, and very thick for its size, 1–1.5 × 0.5–1 cm.; surface white, yellowish-brown when dry, glabrous, smooth or radiate-rugose; margin abruptly acute, entire, slightly revolute when dry: context pallid, firm, not elastic, 5 mm. or more thick; tubes decurrent, short, yellowish, mouths small, 4 to a mm., edges thin, at length elongate: spores not examined: stipe slender, central, dilated above, concolorous, rough, striate, tough, 3–4 cm. long, 2–4 mm. thick.

TYPE LOCALITY: Cuba.
HABITAT: On dead wood.
DISTRIBUTION: Known only from the type locality.

9. **Polyporus craterellus** Berk. & Curt. Jour. Linn. Soc. **10**: 305. 1868.

? *Polyporus cyathiformis* Lév. Ann. Sci. Nat. III. **2**: 181. 1844. (Type from Hispaniola.)

Pileus deeply infundibuliform, 5–8 × 0.1–0.3 cm.; surface glabrous, rufous, very rugose when dry; margin thin, pellucid, entire, fertile, much deflexed in herbarium specimens: context fleshy, fragile when dry, white to pallid, 1–2 mm. thick; tubes decurrent almost to the base of the long stipe, 1 mm. long, 4–5 to a mm., white to yellowish-brown, mouths angular, quite regular, edges thin, fragile, subentire to elongate, more or less collapsing on drying: spores not examined: stipe central, solid, somewhat curved, concolorous with the hymenium, pulverulent, 2.5–4 cm. long, 4–6 mm. thick.

TYPE LOCALITY: Cuba.
HABITAT: On decaying wood.
DISTRIBUTION: Louisiana, Cuba, and possibly Hispaniola.

10. **Polyporus Acicula** Berk. & Curt. Jour. Linn. Soc. **10**: 304. 1868.

Pileus circular, convex, umbilicate, resembling a minute *Omphalia* in shape, 2 × 0.5 mm.; surface glabrous, minutely concentrically rugose when dry, yellowish-brown in the single type specimen; margin acute, involute: context membranous, white; tubes small, alveolar: spores not examined: stipe central, filiform, reddish-brown when dry, glabrous above, slightly villose at the base, 6 mm. long, 0.25 mm. thick.

TYPE LOCALITY: Cuba.
HABITAT: On decaying wood.
DISTRIBUTION: Known only from the type locality.

11. **Polyporus discoideus** Berk. & Curt. Jour. Linn. Soc. **10**: 305. 1868.

Pileus circular, plane, 10–12 cm. in diameter, 1–2 cm. thick at the center, tapering to a few millimeters near the periphery; surface smooth, glabrous, pale-ochraceous to umbrinous; margin darker, thin, straight, entire: context white to yellowish, very soft-corky, elastic, 0.5–1 cm. thick; tubes pallid to dull-brown, mouths subangular, becoming sinuose, 2 to a mm., edges thin, elongate-dentate, collapsed when dry: spores smooth, hyaline, copious: stipe central, thick, even, hispid, concolorous above, darker and radicate below, 6 cm. long, 1.5–2 cm. thick.

TYPE LOCALITY: Cuba.
HABITAT: On dead wood.
DISTRIBUTION: Known only from the type locality.

12. **Polyporus admirabilis** Peck, Bull. Torrey Club **26**: 69. 1899.

Pilei tufted, more or less imbricate, united near the base, very large, 30 cm. or more in diameter, centrally depressed or subinfundibuliform, the individual pilei 10–15 cm. broad, 1–3 cm. thick; surface white and finely pseudosquamose when young, sometimes cracking, at length smooth and glabrous and slightly tinged with yellow; margin entire, rather thick, incurved: context fleshy-tough to rigid and friable, homogeneous, white to yellowish-discolored, 1–2.5 cm. thick; tubes slender, 3–7 mm. long, white to yellowish, fulvous with extreme age, mouths nearly circular, 3–4 to a mm., edges thin, dentate:

spores globose, somewhat flattened, smooth, hyaline, 5–6 μ: stipe short, thick, smooth, glabrous, white, not blackening, often obsolete, 1–2 cm. long, 3 cm. thick.

TYPE LOCALITY: Riverside, Maine.
HABITAT: Decayed trunks of apple trees.
DISTRIBUTION: Maine and Connecticut.

13. **Polyporus phaeoxanthus** Berk. & Mont.; Mont. Syll. Crypt. 154. 1856.

Pileus convex, subhemispherical, 2.5 × 0.5 cm.; surface smooth, glabrous, bay-brown; margin acute, straight, slightly undulate: context fleshy, luteous, rigid, friable and much shrunken when dry, 1–2 mm. thick; tubes remote, minute, very short, 0.5 mm. or less in length, mouths irregular, 6–8 to a mm., edges thick (specimen young), obtuse, luteous: spores not examined: stipe central, cylindrical, solid, fleshy, concolorous, floccose at the base, 4 cm. long, 3 mm. thick.

TYPE LOCALITY: Columbus, Ohio.
HABITAT: Fallen oak wood.
DISTRIBUTION: Known only from the type locality.

14. **Polyporus columbiensis** Berk. Lond. Jour. Bot. 1: 454. 1842.

Pileus circular, very thin, subinfundibuliform 2.5 × 0.05 cm.; surface brown, very smooth and glabrous, resembling parchment or the skin of an apple; margin thin, acute, straight, undulate: context pallid, membranous; tubes decurrent, very short, dark-brown in the type specimens, mouths minute, angular, 5 to a mm., edges thin, acute: spores not examined: stipe central, slender, concolorous, finely velvety, tough and fibrous, 1–5 cm. long, 3 mm. thick.

TYPE LOCALITY: Columbia river, South Carolina.
HABITAT: On dead wood.
DISTRIBUTION: South Carolina.

15. **Polyporus obolus** Ellis & Macbr.; Ellis & Ev. Bull. Lab. Nat. Hist. Univ. Iowa **4**: 68. 1896.

A small plant with very thin, partially translucent, pileus, brown central stipe and exceedingly minute pores. Pileus circular, plane, 1.5–2.5 × 0.03–0.08 cm.; surface minutely tomentose, radiate-rugose, isabelline, fulvous at the center; margin straight or repand, even, glabrous, entirely devoid of teeth or cilia: context 0.2–0.7 mm. thick, tough, white, translucent, especially near the margin; tubes 0.1 mm. long, 8 to a mm., adnate, white, cylindrical, regular, edges thick, entire: spores ovoid, smooth, hyaline, 3.5–4 × 4.5–5 μ: stipe central, tough, elastic, slender, equal, chestnut-colored, glabrous, smooth, much compressed in drying, 2–4 cm. long, 1–2 mm. thick.

TYPE LOCALITY: Nicaragua.
HABITAT: On dead wood.
DISTRIBUTION: Known only from the type locality.

16. **Polyporus albiceps** Peck, Bull. Torrey Club **27**: 19. 1900.

Pileus tough, circular, plane or slightly depressed, 2.5–5 cm. broad, 5–10 mm. thick; surface dry, glabrous, opaque, smooth, white; margin thin, entire, concolorous: context white, homogeneous, 4–8 mm. thick; tubes decurrent, 1 mm. long, white within, mouths scarcely visible to the unaided eye, subcircular, edges thin, white, dentate: spores not examined: stipe central, cylindrical, even, 2.5–4 cm. long, 6–8 mm. thick, resembling the pileus in surface and substance.

TYPE LOCALITY: Sea beach, New Hampshire.
HABITAT: Decaying buried wood under walnut trees.
DISTRIBUTION: Known only from the type locality.

17. **Polyporus humilis** Peck, Ann. Rep. N. Y. State Mus. **26**: 69. 1874.

Pileus spatulate, suborbicular or reniform, 1 × 2–2.5 × 0.1–0.3 cm.; surface white, soft, elastic, subglabrous, azonate; margin sterile, concolorous, entire, acute, inflexed when

dry: context less than 1 mm. thick, spongy, white, somewhat fragile when dry; tubes 1–1.5 mm. long, white, mouths angular, regular, even, 5 to a mm., edges glistening, thin, white to pallid, slightly dentate: spores smooth, hyaline: stipe lateral, compressed or cylindrical, 2.5–5 × 0.3–0.6 cm., resembling the pileus in surface and substance.

TYPE LOCALITY: Sterling, New York.
HABITAT: Half buried sticks and branches in open woods.
DISTRIBUTION: New York.

18. **Polyporus aemulans** Berk. & Curt. Jour. Linn. Soc. **10**: 304. 1868.

Pileus thin, circular, umbilicate, 3.5–4 × 0.05–0.1 cm.; surface radiate-striate, ochraceous, dark yellowish-brown when dry, glabrous at maturity; margin thin, straight, subcinereous, finely hispid, irregularly incised or lobed, sterile for 1–2 mm.: context tough, membranous, pallid to pale-brown; tubes decurrent, yellowish, less than 1 mm. long, gradually disappearing near the margin, mouths alveolar, shallow, 2 to a mm., usually radially elongate, edges acute, becoming somewhat elongate: spores not examined: stipe central, equal, coffee-colored, pulverulent, expanding into the pileus, 2 cm. long, 3–4 mm. thick.

TYPE LOCALITY: Cuba.
HABITAT: Dead wood.
DISTRIBUTION: Known only from the type locality.

19. **Polyporus arculariellus** Murrill, Bull. Torrey Club **31**: 36. 1904.

Favolus Curtisii Berk. Grevillea 1: 68. 1872.

Pileus very thin, circular, umbilicate, 2 × 0.1 cm.; surface smooth, orange-yellow to brown in the type specimen; margin thin, somewhat irregular, beautifully ciliate: context pallid, membranous, translucent; tubes ochraceous when dry, very short, mouths large, angular, oblong, 2 to a mm., edges thin: spores not examined: stipe central, thicker below, setulose, darker than the pileus, 2 cm. long, 2 mm. thick.

TYPE LOCALITY: North Carolina.
HABITAT: On dead wood.
DISTRIBUTION: Known only from the type locality.

20. **Polyporus arculariiformis** Murrill, Torreya **4**: 151. 1904.

Pileus circular, umbilicate, 0.6–0.8 × 0.05–0.1 cm.; surface regularly concentrically rugose about the white, depressed center, isabelline to avellaneous, slightly imbricate-fibrillose; margin thin, acute, soon deflexed, nearly white, changing to isabelline, beset with numerous long, white, pointed cilia: context membranous, white, perfectly opaque; tubes 0.2–0.4 mm. long, 2–3 to a mm., radially elongate, decurrent, pallid, edges thin, irregularly toothed and fimbriate: spores hyaline, smooth, thin-walled, 2–2.5 × 7–8 μ: stipe central, stuffed, equal, concolorous, beset with sharp bristles which partially disappear with age, densely tomentose at the base, 1.5–2 cm. long, 0.5–1 mm. thick.

TYPE LOCALITY: Unaka Springs, Tennessee.
HABITAT: Dead fallen branches in woods.
DISTRIBUTION: Known only from the type locality.
ILLUSTRATION: Murrill, Torreya *loc. cit.*

21. **Polyporus arcularius** (Batsch) Fries, Syst. Myc. **1**: 342. 1821.

Boletus arcularius Batsch, Elench. Fung. 97. 1783.
Boletus exasperatus Schrad. Spic. Fl. Germ. 153. 1794.

Pileus circular, convex, umbilicate, 1–2.5 × 0.1–0.2 cm.; surface azonate, concentrically rugose when dry, fuscous-squamulose to fulvous and nearly glabrous; margin acute, ciliate-dentate, straight, inflexed in drying: context white, membranous; tubes slightly decurrent, rather firm, white to brownish, 1–2 mm. long, mouths large, oblong-rhomboid, 1–2 to a mm., edges thin, elongate, denticulate: spores cylindrical, pointed at the ends, smooth, thin-walled, 2-guttulate, copious, 1.5–2.5 × 7–8 μ: stipe central, slender, even, fuscous-gray to fulvous, subsquamulose to glabrous above, hispid-tomentose at the base, 2–4 cm. long, 2–3 mm. thick.

TYPE LOCALITY: Germany.
HABITAT: Decaying wood of a variety of trees.
DISTRIBUTION: Connecticut to Florida and west to Colorado and Mexico; also in Europe.
ILLUSTRATION: Micheli, Nov. Pl. Gen. *pl. 70, f. 5.*
EXSICCATI: Rav. Fungi Car. 1: *9*; Ellis & Ev. N. Am. Fungi *1690*; Rav. Fungi Am. *209.*

22. **Polyporus variiporus** Murrill, Bull. Torrey Club **31**: 37. 1904.

A small plant resembling *P. Tricholoma*, but firmer and tougher, with thicker stipe and more irregular pores. Pileus orbicular, convex to depressed, 1–2.5 × 0.1–0.2 cm.; surface glabrous, more or less radiately striate, somewhat concentrically rugose, straw-colored to isabelline, fulvous to chestnut-colored around the margin, which is thin, inflexed, undulate, finely ciliate, the cilia being fugacious: context 1–1.5 mm. thick, tough, white; tubes 0.5 mm. in length, 2–4 mm. in diameter, very irregular, much elongate radially near the stipe or in the marginal folds, not noticeably decurrent, yellowish, polygonal to lamelloid, edges firm, entire, becoming denticulate or fimbriate with age: spores ellipsoid, smooth, hyaline, 4 × 7 μ: stipe central, hollow, increasing above, lighter than the pileus, subglabrous, with silky luster, 2 cm. long, 2–6 mm. thick, the buried base enlarged, tomentose, and frequently black.

TYPE LOCALITY: Porto Rico.
HABITAT: Sticks buried in sandy soil in woods.
DISTRIBUTION: Known only from the type locality.

23. **Polyporus Tricholoma** Mont. Ann. Sci. Nat. II. **8**: 365. 1837.

? *Polyporus gracilis* Klotzsch, Ann. Nat. Hist. **3**: 384. 1839. (Type from the West Indies.)
Polyporus stipitarius Berk. & Curt. Jour. Linn. Soc. **10**: 304. 1868. (Type from Cuba.)
Polyporus Humphreyi P. Henn. Hedwigia **37**: 280. 1898. (Type from Jamaica.)

Plants white, slender, clustered, resembling a small agaric. Pileus circular, convex to infundibuliform, 1.5–4 × 0.05–0.2 cm.; surface white or pallid to ochraceous or reddish-brown, azonate, fibrillose to glabrous; margin straight or inflexed, conspicuously ornamented with rigid hairs, or cilia, 2 mm. long and of uncertain duration: context pallid, membranous, tough; tubes slightly decurrent, white to pallid, 0.5–1 mm. long, mouths angular, 5 to a mm., edges thin, dentate, elongate: spores ellipsoidal, smooth, hyaline, 2–2.5 × 6–7 μ: stipe central, equal, glabrous, concolorous, very slender, 1.5–2.5 cm. long, 1–1.5 mm. thick.

TYPE LOCALITY: Cuba.
HABITAT: Dead sticks, logs and other decaying timber in woods.
DISTRIBUTION: Tropical America.
ILLUSTRATION: Mont. Pl. Cell. Cuba *pl. 17, f. 1.*

24. **Polyporus Cowellii** Murrill, Bull. Torrey Club **31**: 39. 1904.

A small light-colored plant resembling an agaric, having a very thin translucent context, minute pores and a slender central stipe. Pileus orbicular, convex to plane, umbilicate, 1–2 × 0.02–0.05 cm.; surface nearly glabrous, minutely concentrically rugose, straw-colored to isabelline, becoming darker and hygrophanous around the margin or in blotches or even over the entire surface, often faintly radiate-striate about the center with delicate white or brown lines; margin very thin, straight or inflexed, somewhat irregular in outline, finely denticulate, the teeth prolonged into short fugacious cilia: context extremely thin, membranous, 0.1–0.2 mm. thick, white or pallid, partially or entirely translucent; tubes 0.2–0.4 mm. long, 3–6 to a mm., larger by confluence, adnate, pallid, polygonal, edges very thin, subentire, becoming fimbriate with age: spores ellipsoidal, smooth, hyaline, binucleate, 2.5 × 5 μ: stipe central, solid, very slender, equal, concolorous or slightly darker, pruinose to glabrous, smooth, longitudinally striate, 2–3 cm. long, 0.3–1 mm. thick, soft and milk-white at the center.

TYPE LOCALITY: St. Kitts.
HABITAT: Decaying wood.
DISTRIBUTION: Porto Rico and St. Kitts.

25. **Polyporus caudicinus** (Scop.) Murrill, Jour. Myc. **9**: 89. 1903.

Boletus caudicinus Scop. Fl. Carn. ed. 2. **2**: 469. 1772.
Boletus squamosus Huds. Fl. Angl. ed. 2. 614. 1778.
Polyporus Ulmi Paulet, Traité Champ. *pl. 13*. 1812?

Sporophore of immense size, reaching 50 cm. in breadth and 3 cm. in thickness, usually found in imbricated masses projecting from the trunks of living trees. Pileus subcircular

and umbilicate when young, soon becoming flabelliform and explanate; surface ochraceous to fulvous, covered with broad, appressed, darker scales, which are very close together in young specimens; margin involute, thin, entire: context fleshy-tough, juicy, milk-white, very thick, odor strong; tubes decurrent, white or pale-yellowish, very short, mouths large, alveolar, 1 mm. or more in diameter, edges thin at maturity, toothed at an early age, becoming lacerate: spores broadly ovoid, smooth, hyaline, $5 \times 12 \mu$: stipe excentric to lateral, obese, reticulate above, clothed at the base with short, dark-brown or black, velvety tomentum, often reduced, variable in length.

TYPE LOCALITY: Carniola.
HABITAT: Injured trunks of elm, maple, horse-chestnut and various other deciduous trees, especially those planted for shade.
DISTRIBUTION: Ontario, Connecticut, and New York; very abundant throughout Europe.
ILLUSTRATIONS: Schaeff. Fung. Bavar. 3: *pls. 101, 102.* 1774; Paulet, Traité Champ *loc. cit.;* Sow. Engl. Fungi *pl. 266;* Bull. Herb. Fr. *pl. 19, 114.*

26. **Polyporus maculosus** Murrill, Bull. Torrey Club **31**: 41. 1904.

A small tough plant nearly related to *P fissus*, but minutely tomentose, with rounded, nearly glabrous, spots of a reddish-brown color. Pileus irregularly orbicular, deeply depressed, $3\text{–}3.5 \times 0.1\text{–}0.2$ cm.; surface finely and densely tomentose, radiately striate, drab-colored, ornamented with several light-bay or chestnut spots mostly situated about midway between the center and the margin, which is very thin, striate, irregular and somewhat fissured but entirely devoid of teeth or cilia: context 0.5–1.5 mm. thick, tough to corky, pallid; tubes 0.2–0.4 mm. long, 6–7 to a mm., decurrent, pallid or yellowish, subcylindrical, edges entire: spores ovoid, hyaline, smooth, $3 \times 4 \mu$, immature in the specimens: stipe central, solid, woody, tapering upward, chestnut-black at the base, with blotches of light-yellow, uneven, subglabrous, 2 cm. long, 2–4 mm. thick.

TYPE LOCALITY: Central America.
HABITAT: Dead wood.
DISTRIBUTION: Known only from the type locality.

27. **Polyporus Wrightii** Murrill, sp nov.

Pileus circular, convex-plane, umbilicate, $3\text{–}4 \times 0.1$ cm.; surface delicately radiate-striate, glabrous, isabelline when dry; margin thin, acute, bay, irregularly undulate or lobed, slightly incurved, not ciliate: context membranous, pallid, corky, homogeneous, less than 0.5 mm. thick; tubes decurrent, umbrinous when dry, 0.5–1 mm. long, 2–3 to a mm., mouths irregular, angular, very variable in size, edges thin, entire, slightly toothed with age: spores smooth, hyaline: stipe short, central, solid, woody, equal or slightly enlarged at the base, pulverulent, black, 5–7 mm. long, 2–3 mm. thick.

Type collected on dead wood in Cuba, *Charles Wright 201.*
DISTRIBUTION: Known only from the type locality.

28. **Polyporus marasmioides** (Pat.) Murrill.

Melanopus marasmioides Pat. Bull. Soc. Myc. Fr. 18: 173. 1902.

Pileus circular, convex-plane, deeply umbilicate, sometimes entirely aborted, $1\text{–}5 \times 0.1$ cm.; surface glabrous, ochraceous, obscurely striate near the margin, marked with a shallow circular peripheral furrow; margin straight, yellowish, translucent, puberulent, denticulate, sterile: context pallid, corky, homogeneous; tubes large, shallow, radiating, angular, 1 mm. or more in diameter, edges thick, hard, entire, becoming denticulate or lacerate: spores elongate-ovoid, hyaline, guttulate, $10 \times 4 \mu$: stipe central, cylindrical, brownish-black, white within, tenacious, woody, velvety-hispid, 1–15 cm. long.

TYPE LOCALITY: On decaying seeds of *Meliosma*, Guadeloupe.
HABITAT: Decaying seeds or dead trunks.
DISTRIBUTION: Guadeloupe and Martinique.

29. **Polyporus Underwoodii** Murrill; Peck, Bull. N. Y. State Mus. **105**: 27. 1906.

Pileus varying from convex to deeply concave, 12–25 cm. in diameter, averaging 0.5 cm. in thickness; surface obscurely concentrically zonate, milk-white, pruinose, cremeous

on drying, the center depressed and avellaneous ; margin irregularly undulate, lobed, either deflexed or recurved, very thin, not ciliate : context white, fleshy, tough, homogeneous, 2–5 mm. thick ; tubes milk-white, 2–3 mm. long, 5 to 6 to a mm., cylindrical, edges thin, entire to lacerate : spores ellipsoidal, hyaline, smooth, 3×6–$7\,\mu$: stipe short, central, solid, woody, equal or tapering downward, smooth, pruinose, white above, fuliginous below, 3 cm. long, 2–3 cm. thick.

TYPE LOCALITY : Cornwall, Connecticut, on buried decaying roots.
HABITAT : Dead roots of deciduous trees.
DISTRIBUTION : Connecticut and New York.

30. **Polyporus elegans** (Bull.) Fries, Epicr. Myc. 440. 1838.

Boletus elegans Bull. Herb. Fr. *pl. 46.* 1780.
Boletus nummularis Bull. Herb. Fr. *pl. 124.* 1782.

Pileus flabelliform to subcircular, scarcely depressed behind, convex or nearly plane, $2–6 \times 3–10 \times 0.2–1$ cm.; surface distinctly radiate-striate, pruinose when young, becoming glabrous and pale-ochraceous at maturity ; margin thin, at first inflexed, often becoming wavy or much lobed and folded with age, not ciliate : context white or pallid, corky, homogeneous, 1–5 mm. thick ; tubes pale-avellaneous, 1–3 mm. long, cylindrical, mouths angular to subcircular, entire, at first white, glistening, pale-umbrinous with age, 4–5 to a mm., edges thin, entire : spores oblong, smooth, hyaline, $7–8 \times 3–3.5\,\mu$: stipe excentric or lateral, rarely central, woody, smooth, pallid above, abruptly black and scutate below, 1–4 cm. long, 2–5 mm. thick.

TYPE LOCALITY : France.
HABITAT : Fallen branches and trunks of various deciduous trees.
DISTRIBUTION : Canada to Virginia and west to California ; also throughout Europe.
ILLUSTRATIONS : Bull. Herb. Fr. *loc. cit.*; Pat. Tab. Fung. *f. 137.*
EXSICCATI : Ellis & Ev. N. Am. Fungi *2303 ;* Underw. & Cook, Illust. Fungi *13.*

31. **Polyporus subelegans** Murrill, sp. nov.

Pileus flabelliform, convex, often attenuate at the base, $1–2 \times 1.5–2.5 \times 0.1$ cm.; surface delicately radiate-striate, glabrous, isabelline to pale-umbrinous when dry ; margin acute, entire, undulate to lobed, rarely inflexed : context pallid, corky, 0.5 mm. thick ; tubes pale-umbrinous, 1 mm. long, cylindrical, mouths white when young, perfectly circular, exceedingly minute, 10 to a mm., edges thick, entire : spores smooth, hyaline : stipe short, lateral, solid, woody, scutate at the base, black, pruinose, rugose, 2–5 mm. long, 2–3 mm. thick.

Type collected on dead sticks in woods at Mooretown, Jamaica, November 22, 1902, *F. S. Earle 542.*
DISTRIBUTION : Jamaica ; Nicaragua.

32. **Polyporus diabolicus** Berk. Jour. Bot. & Kew Misc. 8 : 174. 1856.

Polyporus rufo-atratus Berk. Jour. Bot. & Kew Misc. 8 : 174. 1856. (Type from Panuré, Brazil.)
Polyporus vernicosus Berk. Jour. Bot. & Kew Misc. 8 : 175. 1856. (Type from Panuré, Brazil.)

Pileus circular, umbilicate, convex, $3–10 \times 0.2–0.4$ cm. ; surface bright-bay to almost black, usually radiate-striate, pruinose to glabrous, sometimes proliferous ; margin rather thin, entire, concolorous to crenate or lobed, at first straight, becoming slightly deflexed : context white or pallid, corky, 1–3 mm. thick ; tubes white to umbrinous, 1–2 mm. long, mouths minute, circular, 4–6 to a mm., edges thick, entire : spores smooth, hyaline : stipe central, solid, woody, equal or slightly tapering upward, concolorous, glabrous, 3–8 cm. long, 3–10 mm. thick.

TYPE LOCALITY : Panuré, Brazil.
HABITAT : Dead trunks.
DISTRIBUTION : Central America and South America.

33. **Polyporus fissus** Berk. Lond. Jour. Bot. 6 : 318. 1847.

Polyporus trachypus Berk. & Mont.; Mont. Syll. Crypt. 154. 1856.

Pileus flabelliform to subcircular, often depressed at the disc or behind, convex, very variable in size, $5–15 \times 7–20 \times 0.3–1$ cm.; surface glabrous, minutely radiate-striate, bay or fuliginous, rugose at the disc ; margin thin, fertile, wavy or lobed, often splitting with

age, not deflexed except in drying, not ciliate: context corky, homogeneous, pallid, 2–8 mm. thick; tubes white to yellowish-brown, decurrent, 2 mm. long, cylindrical, slender, mouths subcircular, very minute, 6–7 to a mm., edges thin, entire, becoming elongate with age: spores smooth, hyaline: stipe excentric, varying to central or lateral, usually tapering above, fuliginous to nearly black, pruinose, rugose, 2–6 cm. long, 0.5–2 cm. thick.

TYPE LOCALITY: Ohio.
HABITAT: Fallen dead wood of deciduous trees.
DISTRIBUTION: Maine to Virginia and Ohio, and west to Washington.
EXSICCATI: Ellis, N. Am. Fungi *705*.

34. **Polyporus Blanchetianus** Berk. & Mont. Ann. Sci. Nat. III. **11**: 238. 1839.

?*Polyporus atratus* Fries, Nova Acta Soc. Sci. Upsal. III. 1: 228. 1855. (Type from Mirador, Mexico.)
Polyporus nephridius Berk. Jour. Bot. & Kew Misc. 8: 195. 1856. (Type from Panuré, Brazil.)

Pileus semicircular or reniform, plane or slightly convex, 2–5 cm. broad, 0.5 cm. thick; surface bay to black, very glabrous, often striate or slightly veined; margin acute, entire to wavy or lobed: context corky, pallid to brownish, homogeneous, 2–4 mm. thick; tubes very short, minute, circular or subangular, pallid to umbrinous, 1–2 mm. long, 5–6 to a mm., edges thick, entire: spores oblong, inequilateral, smooth, hyaline, 6–7 × 2–3 μ: stipe lateral to excentric, short, black, opaque, punctulate, 2–10 mm. long, 2–3 mm. thick.

TYPE LOCALITY: Bahia, Brazil.
HABITAT: Dead trunks of trees.
DISTRIBUTION: Tropical America and South America.

35. **Polyporus scabellus** (Pat.) Murrill.

Melanopus scabellus Pat. Bull. Soc. Myc. Fr. 16: 178. 1900.

Pileus semicircular or nearly reniform, plane, slightly elevated behind, 3–8 × 4–10 × 0.1–0.5 cm.; surface bright chestnut-colored, finely radiate-striate or marked with rows of serrated black squamules; margin straight, acute, entire: context white, becoming brownish on drying, coriaceous, membranous; tubes very short, not decurrent, mouths light-brown, more or less tinged with fuliginous near the stipe, round, very small, the dissepiments thick: spores not examined: stipe excentric, horizontal, cylindrical, very short, black, minutely velvety, marked with punctate depressions, 3–4 mm. long, 3–6 mm. thick, inserted upon a black orbicular disc.

TYPE LOCALITY: Guadeloupe.
HABITAT: Trunks of *Myrsine*, *Cedrela*, etc.
DISTRIBUTION: Guadeloupe.

DOUBTFUL SPECIES

Boletus alveolarius Bosc, Ges. Nat. Freunde Berlin Mag. 5: 84. *pl. 4. f. 1.* 1811. *Polyporus alveolarius* Fr. Syst. Myc. 1: 343. 1821. Described from specimens collected on trunks in South Carolina.

Polyporus pachypus Mont. Pl. Cell. Cuba 421. 1842. Collected by Sagra on dead wood in Cuba. No further light has been obtained relative to this species, which Montagne himself said needed investigation.

Polyporus putidus Fr. Nov. Symb. 51. 1851. Collected on trunks in Costa Rica by Oersted. Type not found.

Polyporus peltatus Fries, Nov. Symb. 52. 1851. Collected by Oersted on dead wood at San José, Costa Rica. Apparently very near *P. Blanchetianus*, but the stipe is not black.

Polyporus amygdalinus Berk. & Rav. Grevillea 1: 49. 1872. Described from Ravenel's collections on rotten oak logs in South Carolina in October. Ravenel's field notes are as follows: "Pileus lateral, dimidiate, subimbricate, carnose, 2–4 inches wide, dingy yellowish, with irregular patches of darker color — with a strong odor of vanilla or almond. Hymenium white, pores sinuose and irregular, minute. Stipe obsolete." The type specimen is too old to be of much service, but it is certainly not *P. caudicinus*.

38. **ABORTIPORUS** Murrill, Bull. Torrey Club **31**: 421. 1904.

Hymenophore annual, tough, humus-loving: stipe normally central, often obsolete: context yellowish-white, duplex, spongy above, woody below, tubes thin-walled, mouths polygonal: spores subglobose, smooth, hyaline.

Type species, *Boletus distortus* Schw.

1. **Abortiporus distortus** (Schw.) Murrill, Bull. Torrey Club **31**: 422. 1904.

Boletus distortus Schw. Schr. Nat. Ges. Leipzig **1**: 97. 1822.
Polyporus abortivus Peck, Bot. Gaz. 6: 274. 1881. (Type from Illinois.)

Pileus normally thin, plane or depressed, circular and centrally stipitate when properly developed, but often aborted and very irregular, varying to entirely resupinate forms, 6–13 cm. in diameter, 0.3–1 cm. thick; surface conspicuously and compactly tomentose, anoderm, azonate, smooth, white to alutaceous; margin thin, undulate to lobed, concolorous: context soft and spongy above, hard and woody below, white or isabelline, 3–5 mm. thick; tubes annual, decurrent, white, 1–5 mm. long, mouths irregular, variable, 2–3 to a mm., edges thin, entire to dentate: spores subglobose, smooth, hyaline, 5–7 μ long: stipe central, unequal, very variable, often obsolete, resembling the pileus in surface and context.

TYPE LOCALITY: North Carolina.
HABITAT; About stumps, roots and other dead wood of deciduous trees.
DISTRIBUTION: Canada, and the United States west to Wisconsin and Texas.

39. **SCUTIGER** Paulet, Traité Champ. *pl. 31, f. 1–3.* 1812?

Albatrellus S. F. Gray, Nat. Arr. Brit. Pl. 1: 645. 1821.
Caloporus Quél. Ench. Fung. 164. 1886.

Hymenophore simple, terrestrial, annual, mesopous, usually bright-colored; surface anoderm, variously decorated: context white, rarely colored, fleshy to tough, rigid and fragile when dry; hymenium porose, white or colored, tubes thin-walled: spores smooth, hyaline.

Type species, *Scutiger tuberosus* Paulet.

Surface of pileus uneven, squamose or rugose.
  Pileus sulphur-yellow, pleuropous, surface ornamented with imbricated floccose wart-like scales. 1. *S. Ellisii.*
  Pileus brown.
    Tubes large, 1.5 mm. or more in diameter; surface of pileus ornamented with imbricated tufts of appressed hairs. 2. *S. retipes.*
    Tubes small, 0.5 mm. in diameter; pileus rugose. 3. *S. decurrens.*
Surface of pileus smooth, tomentose or glabrous.
  Pileus light-colored.
    Pileus white. 4. *S. cryptopus.*
    Pileus yellow to red. 5. *S. laeticolor.*
    Pileus blue when fresh, changing to brown on drying.
      Tubes entire, becoming reddish-brown on drying; context ochraceous. 6. *S. caeruleoporus.*
      Tubes lacerate, fading to grayish-brown or dirty-white; context nearly white. 7. *S. holocyaneus.*
  Pileus dark-colored, gray or brown.
    Stipe black and rooting.
      Pileus smoky-brown, subtomentose; tubes regular, entire. 8. *S. radicatus.*
      Pileus drab-colored, nearly glabrous; tubes irregular, toothed. 9. *S. subradicatus.*
    Stipe neither black nor rooting.
      Pileus gray, glabrous or nearly so, margin very thin; stipe short, concolorous. 10. *S. griseus.*
      Pileus brown.
        Stipe dark-purple, very thick; margin of pileus very obtuse. 11. *S. persicinus.*
        Stipe yellowish-brown, usually excentric; margin of pileus thin. 12. *S. Whiteae.*

1. **Scutiger Ellisii** (Berk.) Murrill, Bull. Torrey Club **30**: 427. 1903.

Polyporus Ellisii Berk. Grevillea **7**: 5. 1878.
Polyporus flavosquamosus Underw. Bull. Torrey Club **24**: 84. 1897. (Type from Alabama, in pine woods.)

Pilei cespitose; pileus reniform, convex, 12–15 cm. broad, 1–2 cm. thick; surface sulphur-yellow with a greenish tinge, very rough, with broad, floccose, imbricated scales;

margin thick, concolorous, inflexed: context white or slightly yellowish, fleshy, firm, rather hard when dry, with a strong unpleasant odor when fresh, 1 cm. or more thick; tubes subdecurrent, 3–5 mm. long, mouths large, 1–2 to a mm., irregular, angular, edges thin, white to yellowish, changing to greenish where wounded: spores ovoid, smooth, hyaline, $9 \times 6 \mu$: stipe lateral or excentric, slightly flattened, irregularly roughened, solid, subreticulate, dark-yellow, hard and corky within, 7–8 cm. long, 4–5 cm. thick.

TYPE LOCALITY: Newfield, New Jersey.
HABITAT: Clayey soil in low woods.
DISTRIBUTION: New Jersey, South Carolina, and Alabama.

2. **Scutiger retipes** (Underw.) Murrill, Bull. Torrey Club **30**: 428. 1903.

Polyporus retipes Underw. Bull. Torrey Club **24**: 85. 1897.

Pileus reniform to circular, convex, 6–15 cm. broad, 1–2.5 cm. thick; surface umbrinous to fuliginous, appressed tomentose, finely areolate-rimose, appearing papillate when dry; margin acute, concolorous, inflexed when dry: context fleshy, white, 2 cm. thick when fresh, becoming quite thin on drying; tubes decurrent half the length of the stem, large, shallow, 1–2 mm. broad, mostly hexagonal, edges thin, whitish, finely lacerate: spores smooth, hyaline: stipe excentric, yellowish-white toward the base, white and fleshy within, 4–6 cm. long, 2 cm. or more thick.

TYPE LOCALITY: Auburn, Alabama.
HABITAT: On the ground in pine woods.
DISTRIBUTION: Alabama.

3. **Scutiger decurrens** (Underw.) Murrill, Bull. Torrey Club **30**: 428. 1903.

Polyporus decurrens Underw. Bull. Torrey Club **24**: 83. 1897.

Pileus nearly circular in outline, plane or slightly depressed at the center, centrally stipitate, $5 \times 5 \times 0.5$ cm.; surface very thinly encrusted, brown or bay, rough, imbricate-tuberculose; margin thin, concolorous, sharply inflexed when dry: context white, fragile, homogeneous, 3–5 mm. thick; tubes white to alutaceous within, about 2 mm. long, decurrent nearly to the base of the stem, mouths angular, 2 to a mm., edges rather thin, entire, slightly uneven, white to isabelline: spores smooth, hyaline: stipe bulbous at the base, tapering above, reticulate, slightly darker than the hymenium, 3 cm. or more long, 1–1.5 cm. thick.

TYPE LOCALITY: Pasadena, California.
HABITAT: In the soil on the side of a cañon.
DISTRIBUTION: Known only from the type locality.

4. **Scutiger cryptopus** (Ellis & Barth.) Murrill Bull. Torrey Club **30**: 428. 1903.

Polyporus cryptopus Ellis & Barth. Erythea **4**: 79. 1896.

Pileus circular, convex, 3–7 cm. broad, 3–4 mm. thick; surface glabrous, very smooth, white or slightly grayish; margin very thin, inflexed when dry, concolorous, entire: context white, homogeneous, 1–2 mm. thick; tubes white or yellowish, 1–2 mm. long, slightly decurrent, mouths angular, large, 1–2 to a mm., edges thin, entire or fimbriate: spores ellipsoid, pointed, smooth, hyaline, $5–7 \times 3–4 \mu$: stipe central, bulbous at the base, cylindrical, darker than the pileus, 1.5–2 cm. long, 3–7 mm. thick.

TYPE LOCALITY: Kansas.
HABITAT: Attached to dead grass roots in sandy pastures.
DISTRIBUTION: Kansas and Nebraska.

5. **Scutiger laeticolor** Murrill, Bull. Torrey Club **30**: 428. 1903.

Pileus circular in outline, often irregular, convex, depressed at the center, 10–20 cm. broad, about 1 cm. thick; surface smooth, becoming glabrous, pale dingy-yellow when fresh, brick-colored to purplish-red in old dried plants; margin acute, inflexed at first, irregularly undulate: context fleshy-tough, homogeneous, pale rose-colored, 5–10 mm.

thick; tubes decurrent, white, becoming dark-orange within and without, 1–2 mm. long, mouths subcircular or angular, 5 to a mm., edges thin, fimbriate: spores ovoid, smooth, hyaline, copious, 5–6 × 4 μ: stipe short, thick, increasing upward, central or excentric, 2–3 cm. long, 1–3 cm. thick, resembling the pileus in color, but solid, firm and tough, with darker flesh.

TYPE LOCALITY: Alabama.
HABITAT: On the ground in woods.
DISTRIBUTION: South Carolina and Alabama.

6. **Scutiger caeruleoporus** (Peck) Murrill, Bull. Torrey Club 30: 429. 1903.

Polyporus caeruleoporus Peck, Ann. Rep. N. Y. State Mus. 26: 68. 1874.

Pilei gregarious or cespitose; pileus broadly convex, circular in outline, 2.5–5 × 0.7–1 cm.; surface subtomentose, hygrophanous when fresh, isabelline to fulvous: context fleshy, fragile, white, becoming yellowish-white when dry; tubes decurrent, short, 3–5 mm. long, grayish-blue when fresh, becoming latericeous within in dried specimens, mouths angular, irregular, 2–3 to a mm., edges thin, uneven, toothed, grayish-blue when fresh, becoming bay in dried specimens: spores not examined: stipe central or excentric, solid, concolorous or tinged with the color of the pores, 4–5 cm. long, about 5 mm. thick.

TYPE LOCALITY: New York.
HABITAT: On the ground in woods.
DISTRIBUTION: Vermont and New York.

7. **Scutiger holocyaneus** (Atk.) Murrill, Bull. Torrey Club 30: 429. 1903.

Polyporus holocyaneus Atk. Jour. Myc. 8: 117. 1902.

Pilei gregarious or cespitose; pileus thin, convex to expanded, depressed with age, circular in outline, 2–6 cm. broad; surface deep-blue when fresh, becoming dull-brown or dull reddish-brown when dry; margin irregular, undulate, smooth, hygrophanous: context fleshy, homogeneous; tubes light-blue and somewhat iridescent when fresh, becoming grayish-brown on drying, mouths rather large, angular, irregular, edges thin, lacerate or fimbriate: spores hyaline, smooth, 4–5 × 3–4 μ; basidia 20–25 × 5–6 μ: stipe even, reticulate above, 5–6 cm. long, 4–8 mm. thick.

TYPE LOCALITY: Blowing Rock, North Caro^a.
HABITAT: On the ground beneath coniferous trees.
DISTRIBUTION: Known only from the type locality.

8. **Scutiger radicatus** (Schw.) Murrill, Bull. Torrey Club 30: 430. 1903.

Polyporus radicatus Schw. Trans. Am. Phil. Soc. II. 4: 155. 1832.
Polyporus Morgani Peck, Ann. Rep. N. Y. State Mus. 32: 34. 1879. (Type from Ohio.)
Polyporus kansensis Ellis & Barth. Erythea 4: 1. 1896. (Type from Kansas, on a decayed trunk.)
?*Polyporus hispidellus* Peck, Ann. Rep. N. Y. State Mus. 52: 649. 1899.

Pileus solitary, fleshy, convex or plane, circular in outline, depressed at the center, 10 cm. broad, 5–9 mm. thick; surface tomentose, subsquamulose, brown or reddish-brown; margin thin, concolorous, incurved when dry: context soft, spongy, white, homogeneous, 3–6 mm. thick; tubes decurrent, short, white to isabelline, mouths subcircular, 2–3 to a mm., edges thin, white or yellowish, entire: spores ovoid or ellipsoid, smooth, hyaline, 6–8 × 5 μ; basidia 6–8 μ thick: stipe central, fusiform, cylindrical above, expanding into the pileus, elastic, solid, velvety, reticulate, pale-fulvous, black and rooting below.

TYPE LOCALITY: Pennsylvania.
HABITAT: In woody earth or on much-decayed wood about stumps or dead trunks.
DISTRIBUTION: Ontario to Pennsylvania and west to Kansas.
ILLUSTRATION: Ohio Myc. Bull. 10: *f. 46*. 1903.

9. **Scutiger subradicatus** Murrill, Bull. Torrey Club 30: 430. 1903.

A rather large thin plant with light-brown, almost glabrous, surface, small white serrated tubes and short black stipe. Pileus irregular in outline, convex to plane, 12 × 9 × 0.5

cm.; surface fibrillose, drab-colored to isabelline; margin very thin, inflexed when young, irregularly undulate at maturity: context fleshy-tough, 1–7 mm. thick, pure milk-white even when dry; tubes mere areoles at first, short and small at maturity, scarcely 1 mm. in length, 3–4 to a mm., decurrent to the blackened part of the stipe, white, yellowish when dry, mouths polygonal, regular, at length much elongate by confluence or otherwise irregular, edges thin, toothed or fimbriate when mature: spores ovate to ellipsoidal, smooth, hyaline, not abundant, 3–4 × 5–7 μ: stipe short, thick, central, tapering and attached at the base, sooty-black up to the pores, 4 × 2.5 cm.; context milk-white, firm, fleshy-tough, surface minutely tomentose, rugose-reticulate when dry.

TYPE LOCALITY: New York.
HABITAT: Attached to buried dead wood.
DISTRIBUTION: Ontario and New York.

10. **Scutiger griseus** (Peck) Murrill, Bull. Torrey Club **30**: 431. 1903.

Polyporus griseus Peck, Ann. Rep. N. Y. State Mus. **26**: 68. 1874.
Polyporus Earlei Underw. Bull. Torrey Club. **24**: 84. 1897. (Type from Alabama.)

Pileus circular, often irregular, convex, 7–12 cm. broad, 1 cm. or less thick; surface glabrous or minutely tomentose, cinereous, slightly darker towards the center; margin thin, concolorous, often incurved on drying, irregular, undulate to lobed: context soft-fleshy, rosy-gray, about 5 mm. thick; tubes slightly decurrent, 1–2 mm. long, whitish-stuffed when young, white to pale-umbrinous within, mouths subangular, unequal, 2–4 to a mm., edges thin, entire to fimbriate, lacerate with age, white when young, becoming gray or umbrinous: spores subglobose, hyaline, echinulate, 5–6 × 4.5–5 μ: stipe central, thick, short, bulbous at the base, with surface and substance resembling that of the pileus, but darker in color, 4–5 cm. long, 1–1.5 cm. thick.

TYPE LOCALITY: New York.
HABITAT: On the ground in open deciduous or coniferous woods.
DISTRIBUTION: New York, New Jersey, and Alabama.

11. **Scutiger persicinus** (Berk. & Curt.) Murrill, Bull. Torrey Club **30**: 431. 1903.

Polyporus persicinus Berk. & Curt. Grevillea **1**: 37. 1872.

Pilei confluent; pileus soft, slightly elastic, pulvinate, often oblique, very thick, somewhat depressed, 10–25 cm. broad, 1–2 cm. thick; surface fulvous-brown, becoming purple at times, short-tomentose; margin lobed or undulate, very obtuse: context white, with black lines marking the seasons of growth in dried specimens, watery-spongy, reddish, dark-purple in the cuticle in fresh specimens, fading to pale-lavender; tubes decurrent, white when fresh, brownish-black in dried specimens, 2–3 mm. long, mouths angular, 2 to a mm., edges thin, lacerate: spores not seen: stipe central, thick, conical, dark-purple, 5 cm. long, 4–8 cm. thick.

TYPE LOCALITY: South Carolina.
HABITAT: At the base of trunks in pine woods.
DISTRIBUTION: Known only from the type locality.

12. **Scutiger Whiteae** Murrill, Bull. Torrey Club **30**: 432. 1903.

Pilei cespitose, often confluent at the base, all stages of development being found in one cluster; pileus subcircular in outline, convex, depressed at the center, 8–12 × 0.5–1 cm.; surface pruinose, velvety to the touch, isabelline to fulvous; margin acute, at first inflexed, irregularly undulate at maturity: context fleshy-tough, 0.2–0.5 cm. thick, of nutty flavor, rose-tinted when dry, dark-red next to the tubes; tubes 0.1–0.3 cm. long, 3 to a mm., very decurrent, white when young and fresh, rose-colored when bruised or dried, mouths circular or subcircular, edges thin, fimbriate: spores ovoid, hyaline, smooth, copious, 3.5 × 5 μ: stipe short, usually excentric, enlarged at the base, 3 × 2–4 cm., concolorous, tough.

TYPE LOCALITY: Bar Harbor, Maine.
HABITAT: Among moss on a damp river bank.
DISTRIBUTION: Maine and New Hampshire.

40. **GRIFOLA** (Micheli) S. F. Gray, Nat. Arr. Brit. Pl. 1: 643. 1821.

Polypilus Karst. Rev. Myc. 3[9]: 17. 1881.
Meripilus Karst. Bidr. Finl. Nat. Folk 37: 33. 1882.
Cladomeris Quél. Ench. Fung. 167. 1886.

Hymenophore large, annual, stipitate, compound, intricately branched or lobed, humus-loving or epixylous, rarely terrestrial, usually found at the base of a tree-trunk; surface smooth, pallid to gray or brown: context white, fleshy or fleshy-tough, rigid and fragile when dry; tubes large, irregular, thin-walled, becoming friable or laciniate with age: spores hyaline, smooth, rarely verrucose.

Type species, *Boletus frondosus* Dicks.

Hymenium ochraceous, becoming dirty-yellow with age; plants terrestrial, irregularly confluent, olivaceous to greenish-yellow. 1. *G. poripes.*
Hymenium at first fuliginous, becoming paler. 2. *G. Sumstinei.*
Hymenium white or pallid from the first.
  Surface of pileus gray or grayish-brown to coffee-colored; stipe intricately branched; pileoli very numerous and small.
    Pileoli lateral, spatulate or dimidiate. 3. *G. frondosa.*
    Pileoli centrally attached, circular and umbilicate. 4. *G. ramosissima.*
  Surface of pileus pallid or alutaceous; stipe not intricately branched, lobes usually few in number and comparatively large.
    Sporophore of immense size, 20–60 cm. in diameter; spores echinulate, 8–9 μ. 5. *G. Berkeleyi.*
    Sporophore small for the genus, only 8 cm. or less in diameter; spores smooth, ovoid, much smaller. 6. *G. fractipes.*

1. **Grifola poripes** (Fries) Murrill, Bull. Torrey Club 31: 335. 1904.

Polyporus poripes Fries, Nov. Symb. 48. 1851.
Polyporus flavovirens Berk. & Rav. Ann. Mag. Nat. Hist. II. 12: 431. 1853.—Grevillea 1: 38. 1872. (Type from South Carolina.)

Pileus at first simple and centrally stipitate, becoming imbricate-multiplex when fully developed, 8–20 cm. in diameter; pileoli soft, fleshy, fragile when dry, circular to flabelliform, pulvinate or depressed to applanate, 5–10 cm. broad, 5–8 mm. thick; surface sordid-yellow, with yellowish-green zones, becoming dull yellowish-green, finely tomentose to subglabrous; margin irregular, undulate to lobed, concolorous: context fleshy, very fragile when dry, 2–4 mm. thick, white to yellowish; tubes very decurrent, yellow to yellowish-green, 3–5 mm. long, mouths irregular, circular to sinuous, 1–2 to a mm., at first milk-white, becoming dirty-yellow, edges thin, fragile, lacerate with age: spores subglobose, smooth, hyaline, 3–4.5 μ: stipe central or excentric, pallid, 3–6 cm. long, 1–1.5 cm. thick, becoming tubercular and connate-ramose at maturity.

TYPE LOCALITY: North Carolina.
HABITAT: On the ground in woods.
DISTRIBUTION: Eastern United States, west to Missouri.
EXSICCATI: Rav. Fungi Car. 4: *4;* Ellis & Ev. N. Am. Fungi *1689.*

2. **Grifola Sumstinei** Murrill, Bull. Torrey Club 31: 335. 1904.

A very large plant resembling *G. frondosa* in habit and general appearance, but with fewer and broader pileoli, darker surface and darker hymenium. Pileus imbricate-multiplex, 20 × 30 cm.; pileoli flabelliform to spatulate, 6–8 × 6–8 × 0.3–0.5 cm.; surface radiate-rugose, finely tomentose, light- to dark-brown; margin very thin, fissured and strongly inflexed when dry: context white, fibrous, fleshy-tough to almost leathery, 0.3 cm. thick; tubes 0.2 cm. long, 7 to a mm., at first fuliginous, becoming pallid at maturity, polygonal, irregular, edges very thin and fragile, becoming lacerate: spores globose, smooth, hyaline, thin-walled, copious, 5 μ: stipe tubercular, woody, blackish below, connate-ramose, lighter-colored, passing insensibly into the pileoli above.

TYPE LOCALITY: Pennsylvania.
HABITAT: About old stumps and trunks of deciduous trees.
DISTRIBUTION: New York, Pennsylvania, Virginia, Ohio, and Louisiana.

3. **Grifola frondosa** (Dicks.) S. F. Gray, Nat. Arr. Brit. Pl. 1 : 643. 1821.

Boletus frondosus Dicks. Pl. Crypt. Brit. 1 : 18. 1785.
Polyporus frondosus Fries, Syst. Myc. 1 : 355. 1821.
Polypilus frondosus Karst. Rev. Myc. 3[9] : 17. 1881.

Pileus imbricate-multiplex, 15–40 cm. in diameter ; pileoli very numerous, branching from a common trunk, imbricate or confluent, variable in size and shape, dimidiate to flabelliform, 1.5–6 cm. broad ; surface smoky-gray, fibrillose, radiate-striate ; margin thin, undulate or lobed, strongly inflexed when dry : context white, very thin, tough, fragile, having the odor of mice ; tubes white, 2–3 mm. long, mouths circular and regular when young, 3 to a mm., often large and angular with age, edges white, thin, entire to lacerate : spores subglobose to ellipsoid, smooth, hyaline : stipe tubercular, white, connate-rimose.

TYPE LOCALITY : England.
HABITAT : At the base of oak trees.
DISTRIBUTION : North America ; also in Europe.
ILLUSTRATIONS : Sow. Engl. Fung. *pl. 87 ;* Atk. Stud. Am. Fungi *f. 176, 177.* 1900.
EXSICCATI : Ellis & Ev. N. Am. Fung. *2103 ;* Beck, Krypt. Exs. *307 ;* Rab.-Wint. Fungi Eur. *3947 ;* Krieger, Fungi Sax. *1115.*

4. **Grifola ramosissima** (Scop.) Murrill, Bull. Torrey Club **31** : 336. 1904.

Boletus ramosissimus Scop. Fl. Carn. ed. 2. **2** : 470. 1772.
Boletus umbellatus Pers. Syn. Fung. 519. 1801.
Polyporus umbellatus Fries, Syst. Myc. 1 : 354. 1821.
Cladomeris umbellata Quél. Ench. Fung. 167. 1886.
Cladomeris ramosissima Murrill, Jour. Myc. 9 : 95. 1903.

Pileus imbricate-multiplex, densely clustered, squarrose, umbellate, 12–20 cm. broad ; pileoli very numerous, quite regular, circular in outline, depressed at the center, 1-4 cm. in diameter ; surface usually fuliginous, sometimes light-brown or even white, fibrillose, very rugose when dry ; margin thin, inflexed : context white, fibrous, very thin, fragile when dry ; tubes decurrent, shallow, mouths angular, 2–3 to a mm., edges thin, entire to lacerate : spores oblong, hyaline, 9–10 × 3–4 μ : stipe tubercular, with long cylindrical branches, which are white and usually entirely covered with tubes.

TYPE LOCALITY : Carniola.
HABITAT : At the base of oak trees.
DISTRIBUTION : Connecticut, New York, Pennsylvania, and Ohio ; also in Europe.
ILLUSTRATIONS : Schaeff. Fung. Bavar. *pl. 111 ;* Atk. Stud. Am. Fung. *f. 178.* 1900.
EXSICCATI : Krieger, Fungi Sax. *859.*

5. **Grifola Berkeleyi** (Fries) Murrill, Bull. Torrey Club **31** : 337. 1904.

Polyporus Berkeleyi Fries, Nov. Symb. 56. 1851.
Polyporus subgiganteus Berk. & Curt. Grevillea 1 : 49. 1872. (Type from Connecticut.)
Polyporus Beatiei Banning ; Peck, Ann. Rep. N. Y. State Mus. **31** : 36. 1879. (Type from Maryland.)
Polyporus lactifluus Peck, Bull. Torrey Club 8 : 51. 1881. (Type from Maryland.)
Polyporus anax Berk. Grevillea 12 : 37. 1883. (Type from Ohio.)

Pileus imbricate-multiplex, 15–50 cm. broad, 10–20 cm. high ; pileoli very broad, applanate to infundibuliform, thin, 5–15 cm. broad, 5–15 mm. thick ; surface white to obscurely alutaceous, subtomentose, rugose-undulate ; margin acute, undulate to lobed, sterile, often inflexed : context white, tough, fragile when dry, homogeneous, milky in young plants, 5–10 mm. thick ; tubes decurrent, white, unequal, 2–5 mm. long, mouths angular, about 1 mm. broad, edges soft, white, entire, very fragile when dry : spores globose, roughly echinulate, 6–8 μ : stipe short, tubercular, 5–10 cm. thick.

TYPE LOCALITY : North Carolina.
HABITAT : At the base of oak trees.
DISTRIBUTION : Eastern Canada to Virginia.
EXSICCATI : Ellis & Ev. N. Am. Fungi *706 ;* Rab.-Wint. Fungi Eur. *3427.*

6. **Grifola fractipes** (Berk. & Curt.) Murrill, Bull. Torrey Club **31** : 338. 1904.

Polyporus fractipes Berk. & Curt. Grevillea 1 : 38. 1872.
Polyporus flavidus Peck, Ann. Rep. N. Y. State Mus. **26** : 68. 1874. (Type from New York.)
Not *P. flavidus* Berk. 1852.

Polyporus Peckianus Cooke, Trans. Bot. Soc. Edinb. **13**: 148. 1878.
Polystictus Peckianus Sacc. Syll. Fung. 6 : 209. 1888.

Pileus cespitose-multiplex, sometimes simple, rather small for the genus, rarely 10 cm. in diameter; pileoli irregularly circular or flabelliform, often depressed, 3–5 cm. broad, 2–5 mm. thick; surface pale-luteous or ochraceous, lightly marked with obscure lines, rugose, finely tomentose, roughly villose behind; margin very thin, concolorous, inflexed when dry: context fleshy, very fragile when dry, white, 1–2 mm. thick; tubes decurrent, white to yellowish, 1–2 mm. long, mouths small, angular, 4–5 to a mm., edges thin, fragile, fimbriate: spores smooth, hyaline: stipe central, irregular and distorted, more pallid than the pileus, pulverulent to glabrous, solid, tubercular, often branched just above the base, the branches being 5 mm. in diameter and nearly cylindrical in shape.

TYPE LOCALITY: South Carolina.
HABITAT: On the ground in woods.
DISTRIBUTION: Canada, New York and South Carolina.

41. **AURANTIPORELLUS** Murrill, Bull. Torrey Club 32: 486. 1905.

Hymenophore large, annual, epixylous, effused, immarginate or narrowly reflexed; surface azonate, soft, anoderm and orange-colored when young, becoming slightly encrusted and darker with age: context orange-colored, extremely soft and spongy throughout; tubes orange-colored, very large, thin-walled, irregular, lacerate, fragile: spores smooth, hyaline.

Type species, *Polyporus alboluteus* Ellis & Ev.

1. **Aurantiporellus alboluteus** (Ellis & Ev.) Murrill, Bull. Torrey Club 32: 486. 1905.

Fomes alboluteus Ellis & Ev. Proc. Acad. Phila. 1895: 413. 1895.
Polyporus alboluteus Ellis & Ev. Bull. Torrey Club 25: 513. 1898.

Pileus soft, spongy, effused, laterally connate, narrowly reflexed at times, but usually entirely resupinate, 5–6 cm. broad, 1–4 cm. thick; surface anoderm, velvety, azonate, orange-colored, becoming slightly encrusted and darker with age; margin thin, reflexed, concolorous: context very soft, spongy, orange-colored, absorbing water to a remarkable degree, 0.5–1.5 cm. thick; tubes annual, light orange-colored, very large, 1–2 cm. long, mouths irregular, 1–2 mm. in diameter, edges thin, concolorous, somewhat fragile, more pallid on their extreme margin, lacerate with age: spores oblong, smooth, hyaline, 8–12 × 3 μ.

TYPE LOCALITY: Colorado, 3000 meters, on charred trunks of *Abies subalpina*.
HABITAT: Dead coniferous trunks projecting from the snow.
DISTRIBUTION: Colorado.
EXSICCATI: Ellis & Ev. Fungi Columb. *1637*.

42. **PYCNOPORELLUS** Murrill, Bull. Torrey Club 32: 489. 1905.

Hymenophore annual, epixylous, sessile, dimidiate, simple or imbricate, reddish or orange-colored throughout; surface anoderm, margin thin: context thin, friable; tubes thin-walled, fragile, at length lacerate: spores smooth, hyaline or pale-yellowish.

Type species, *Polyporus fibrillosus* Karst.

1. **Pycnoporellus fibrillosus** (Karst.) Murrill, Bull. Torrey Club 32: 489. 1905.

Polyporus fibrillosus Peck, Ann. Rep. N. Y. State Mus. 26: 69. 1874. (Type from New York, on fallen wood.)
Inonotus fibrillosus Karst. Bidr. Finl. Nat. Folk 37: 72. 1882.
Polyporus Shiraianus P. Henn. Bot. Jahrb. 28: 269. 1900. (Type from Japan; on *Abies*.)

Pileus soft, spongy, fragile when dry, thin, sessile, dimidiate, imbricate, 3–5 × 6–8 × 0.5–1 cm.; surface anoderm, orange-colored, fribrillose-tomentose, zonate, at times uneven and sodden in appearance; margin thin, subentire, tomentose, paler: context obscurely zoned, orange-colored, friable when dry, spongy and absorbing water when fresh, 3–5 mm. thick; tubes annual, 3–5 mm. long, pallid to orange-colored, mouths angular,

irregular, 1–2 to a mm., edges very thin, pallid and entire when young, at length orange-colored and very lacerate: spores smooth, oblong, hyaline or pale-yellowish, 6–7 × 3–4 μ.

TYPE LOCALITY: Finland.
HABITAT: Dead coniferous wood.
DISTRIBUTION: Northern North America, as far south as New York; also in Europe and Asia.

43. **PYCNOPORUS** Karst. Rev. Myc. 3[9]: 18. 1881.

Hymenophore annual, sometimes reviving, epixylous, sessile, dimidiate, simple or imbricate, rarely pseudo-stipitate; surface anoderm, slightly pelliculose at times, zonate or azonate, bright- or dull-red: context red, soft-corky to punky; hymenium concolorous, tubes small, firm, thin-walled: spores smooth, hyaline.

Type species, *Boletus cinnabarinus* Jacq.

Pileus thick, smooth, opaque; plant abundant in temperate regions. 1. *P. cinnabarinus.*
Pileus thin, often zonate, brilliant-red; plant abundant in the tropics. 2. *P. sanguineus.*

1. **Pycnoporus cinnabarinus** (Jacq.) Karst. Rev. Myc. 3[9]: 18. 1891.

Boletus cinnabarinus Jacq. Fl. Austr. 4: 2. 1776.
Boletus coccineus Bull. Herb. Fr. 364. 1791.
Polyporus cinnabarinus Fries, Syst. Myc. 1: 371. 1821.
Trametes cinnabarina Fries, Nov. Symb. 98. 1851.

Pileus convex-plane, dimidiate, laterally extended, reviving the second season, 4–6 × 5–10 × 0.5–1 cm.; surface azonate, rugulose, pruinose to tomentose, at length glabrous, the color changing from light-orange to cinnabar-red, often fading with age; margin acute, except in large plants, faintly zonate: context floccose, elastic, zonate, reddish; tubes nearly equaling the context, firm, miniatous within, the mouths small, 2–3 to a mm., regular, coccineous, dissepiments rather thin, entire: spores smooth, hyaline, 6–8 × 2–3 μ.

TYPE LOCALITY: Carinthia, Austria.
HABITAT: Dead wood of various deciduous trees.
DISTRIBUTION: Canada and the United States; also in Europe and Asia.
ILLUSTRATIONS: Jacq. Fl. Austr. *pl. 304;* Bull. Herb. Fr. *pl. 501, f. 1.*
EXSICCATI: Rav. Fungi Am. *419;* Thüm. Myc. Univ. *2007;* Ellis & Ev. Fungi Columb. *205;* Ellis, N. Am. Fungi *502;* Rav. Fungi Car. 2: *17;* Karst. Finl. Fungi *425.*

2. **Pycnoporus sanguineus** (L.) Murrill, Bull. Torrey Club **31**: 421. 1904.

Boletus sanguineus L. Sp. Pl. ed. 2. 1646. 1762.
Xylometron sanguineum Paulet, Traité Champ. *pl. 3, f. 3, 4.* 1812?
Polyporus sanguineus G. Meyer, Fl. Esseq. 304. 1818.
Polystictus sanguineus Fries, Nov. Symb. 75. 1851.
Polyporus argentatus Cooke, Grevillea 15: 20. 1886. (Type from Australia.)

Pileus thin, coriaceous, sessile or spuriously stipitate, dimidiate, conchate or reniform, imbricate, laterally connate at times, 3–5 × 4–8 × 0.4–0.6 cm.; surface zonate, finely tomentose to glabrous, bright-red, often variegated with yellowish-red zones, fading to pure white in old specimens exposed to the sun; margin acute, finely tomentose, yellowish-red: context floccose, elastic, yellowish-red, 1–3 mm. thick; tubes annual, very short, bright reddish-miniatous, scarcely a mm. long, mouths circular to angular, regular, minute, 3–5 to a mm., edges thin, firm, entire, concolorous with the interior: spores smooth, hyaline, oblong, 3–4 × 1–2 μ.

TYPE LOCALITY: Surinam.
HABITAT: Dead wood of various deciduous and evergreen trees.
DISTRIBUTION; Tropical regions of the world.
EXSICCATI: Ellis & Ev. N. Am. Fungi *501;* Underw. & Cook, Illust. Fungi *14;* Thüm. Myc. Univ. *805, 905;* Rav. Fungi Car. 2: *16;* Rab.-Wint. Fungi Eur. *3032;* Rav. Fungi Am. *418.*

44. **AURANTIPORUS** Murrill, Bull. Torrey Club 32: 487. 1905.

Hymenophore large, annual, epixylous, sessile, dimidiate; surface anoderm, sodden, bibulous, reddish-orange, soon fading: context reddish-yellow, fleshy-tough to woody, juicy when fresh, rigid when dry, conspicuously zonate; tubes small, slender, thin-walled, brilliant-orange when fresh, becoming dark, resinous and fragile on drying: spores smooth, hyaline.

Type species, *Polyporus Pilotae* Schw.

1. **Aurantiporus Pilotae** (Schw.) Murrill, Bull. Torrey Club 32 : 487. 1905.

? *Polyporus croceus* Pers. Obs. Myc. 1 : 87. 1796. (Type from Europe.)
Polyporus Pilotae Schw. Trans. Am. Phil. Soc. II. 4 : 157. 1832.
Polyporus Pini-canadensis Schw. Trans. Am. Phil. Soc. II. 4 : 157. 1832. (Type from Pennsylvania, said to have been found on hemlock.)
Polyporus hypococcinus Berk. Lond. Jour. Bot. 6 : 319. 1847. (Type from Ohio.)
Polyporus castanophilus Atk. Jour. Myc. 8 : 118. 1902. (Type from North Carolina, on rotten chestnut logs.)

Pileus sessile, often subradicate, dimidiate, convex, 8–20 × 10–40 × 1–3 cm.; surface rugose, sodden, velvety, with short hairs, ochraceous or reddish-orange, soon fading, brownish behind; margin ochraceous, sterile, tumid, becoming thinner at maturity: context melleous, tough, watery, elastic, rigid when dry, conspicuously marked with sordid zones, odor strong, but not characteristic; tubes 5–10 mm. long, luteous-orange to bright-orange when fresh, becoming dark and resinous on drying, the mouths small, regular, concolorous, 4–5 to a mm., dissepiments thin, minutely fimbriate: spores smooth, hyaline, 3–4 × 2–3 μ.

TYPE LOCALITY: Pilot Mountain, North Carolina, on a dead chestnut trunk.
HABITAT: Much decayed oak and chestnut logs.
DISTRIBUTION: Canada to North Carolina and west to Iowa; possibly also in Europe.
EXSICCATI: Ellis & Ev. N. Am. Fungi *2508*.

45. **FLAVIPORELLUS** Murrill, Bull. Torrey Club 32 : 485. 1905.

Hymenophore small, annual, epixylous, sessile or substipitate, flabelliform, yellow throughout; surface anoderm, margin thin: context very thin and friable; tubes small, thin-walled, fragile: spores smooth, hyaline or yellowish.

Type species, *Polyporus Splitgerberi* Mont.

1. **Flaviporellus Splitgerberi** (Mont.) Murrill, Bull. Torrey Club 32 : 486. 1905.

Polyporus Splitgerberi Mont. Ann. Sci. Nat. II. 16 : 109. 1841.—Syll. Crypt. 164. 1856.
Polyporus sulphuratus Fries, Nov. Symb. 79. 1851. (Type from Mexico.)
Polyporus rheicolor Berk. & Curt. Jour. Linn. Soc. 10 : 313. 1868. (Type from Cuba.)

Pileus thin, dimidiate to spatulate-cuneate, densely imbricate, gibbous behind, 2–4 × 3–8 × 0.1–0.2 cm.; surface anoderm, fibrose-radiate, subzonate, smooth, flavous-luteous with reddish-fulvous spots or zones, fulvous or umbrinous behind; margin very thin, subfibrous, inflexed or folded when dry, broadly sterile, golden-yellow: context radiate-fibrous, corky to woody, very hard next to the tubes, 1 mm. thick, bright shining-flavous; tubes annual, melleous within, scarcely a mm. long, mouths circular to angular, 4–6 to a mm., pale-luteous to melleous, edges very thin, becoming dentate-lacerate with age: spores smooth, ovoid or ellipsoid, subhyaline or pale-luteous, 4–5 × 3 μ; hyphae 3 μ thick.

TYPE LOCALITY: Surinam, on dead standing trunks.
HABITAT: Dead wood.
DISTRIBUTION: Mexico; Cuba; also in Surinam.

46. **LAETIPORUS** Murrill, Bull. Torrey Club 31 : 607. 1904.

Hymenophore annual, epixylous, fleshy, anoderm, cespitose-multiplex: context cheesy to fragile, light-colored; tubes thin-walled, fragile, bright-yellow, mouths irregularly polygonal: spores smooth, hyaline.

Type species, *Agaricus speciosus* Batt.

1. **Laetiporus speciosus** (Batt.) Murrill, Bull. Torrey Club 31 : 607. 1904.

Agaricus speciosus Batt. Fung. Hist. 68. 1755.
Boletus sulphureus Bull. Herb. Fr. *pl. 429*. 1788.
Boletus citrinus Planer, Ind. Pl. Erf. 26. 1788.
Polyporus sulphureus Fries, Syst. Myc. 1 : 357. 1821.
Polypilus sulphureus Karst. Rev. Myc. 3[9] : 17. 1881.
Polypilus speciosus Murrill, Jour. Myc. 9 : 93. 1903.
Polyporus cincinnatus Morgan, Jour. Cinc. Soc. Nat. Hist. 6 : 97. 1885.

Hymenophore cespitose-multiplex, 30–60 cm. broad; pileus cheesy, not becoming rigid, reniform, very broad, more or less stipitate, 5–15 × 7–20 × 0.5–1 cm.; surface finely tomentose to glabrous, rugose, anoderm, subzonate at times, varying from lemon-yellow to orange, fading out with age; margin thin, fertile, concolorous, subzonate, finely tomentose, undulate, rarely lobed: context cheesy, very fragile when dry, yellow when fresh, usually white in dried specimens, homogeneous, 3–7 mm. thick; tubes annual, 2–3 mm. long, sulphur-yellow within, mouths minute, angular, somewhat irregular, 3–4 to a mm., edges very thin, lacerate, sulphur-yellow, with color fairly permanent in dried specimens: spores ovoid, smooth, or finely papillate, hyaline, 6–8 × 3–5 μ.

TYPE LOCALITY: Europe.
HABITAT: Trunks of deciduous, and rarely evergreen, trees.
DISTRIBUTION: Cosmopolitan.
ILLUSTRATIONS: Batt. Fung. Hist. *pl. 34, f. B;* Bull. Herb. Fr. *loc. cit.;* Gibson Edible Toadst. *pl. 26.*
EXSICCATI: Ellis & Ev. N. Am. Fungi *707;* Shear, N. Y. Fungi *30;* Cavara, Fungi Longob. *214;* Thüm. Myc. Univ. *1603;* Linhart, Fungi Hung. *149;* Krieger, Fungi Sax. *365;* Rab. Fungi Eur. *907;* Thüm. Fungi Austr. *1008.*

47. PHAEOLOPSIS Murrill, Bull. Torrey Club 32: 489. 1905.

Hymenophore annual, epixylous, stipitate; surface azonate, anoderm, yellow or brown; margin acute: context yellow, fleshy to tough and fibrous, not friable; tubes yellow, regular, minute, thin-walled: spores smooth, hyaline: stipe excentric or lateral, with substance and surface like that of the pileus.

Type species, *Polyporus Verae-crucis* Berk.

1. Phaeolopsis Verae-crucis (Berk.) Murrill, Bull. Torrey Club 32: 490. 1905.

Polyporus Verae-crucis Berk. Ann. Mag. Nat. Hist. 10: Suppl. 369. *pl. 9–12.* 1843.

Pileus fleshy to tough, becoming rigid, flabelliform, with stipe lateral or excentric, depressed behind, 5–6 × 7–8 × 0.2–0.3 cm.; surface anoderm, azonate, glabrous, radiate-striate, bright-fuscous, darker with age; margin acute, undulate to lobed, inflexed when dry: context dark yellowish-orange in dried specimens, rhubarb-yellow when fresh, tough and fibrous, glistening, 1–2 mm. thick; tubes annual, about 1 mm. long, rhubarb-yellow when fresh, becoming fuscous, mouths minute, circular, regular, 6–7 to a mm., edges thin, equal, entire: stipe excentric or lateral, attenuate below, rhubarb-yellow when fresh, rough, slightly tomentose, resembling the context within.

TYPE LOCALITY: Vera Cruz.
HABITAT: Roots of trees.
DISTRIBUTION: Known only from the type locality.
ILLUSTRATION: Ann. Mag. Nat. Hist. *loc. cit.*

48. CERRENELLA Murrill, Bull. Torrey Club 32: 361. 1905.

Hymenophore thin, effused-reflexed, annual, epixylous; surface brown, zonate, anoderm; margin thin: context thin, coriaceous, brown; hymenium at first poroid, very soon becoming irpiciform, the teeth irregular and compressed: spores smooth, hyaline.

Type species, *Irpex tabacinus* Berk. & Curt.

Pileus very thin, 1 mm. or less in thickness.
  Hymenium ferruginous, unchanging. 1. *C. Ravenelii.*
  Hymenium olivaceous, becoming cinereous. 2. *C. farinacea.*
Pileus 3–7 mm. thick; hymenium chestnut-colored to almost black. 3. *C. subcoriacea.*

1. Cerrenella Ravenelii (Berk.) Murrill.

Daedalea Ravenelii Berk. Grevillea 1: 68. 1872.
Irpex tabacinus Berk. & Curt. Grevillea 1: 102. 1872. (Type from South Carolina.)
Cerrenella tabacina Murrill, Bull. Torrey Club 32: 361. 1905.

Pileus thin, coriaceous, flexible, effused-reflexed, the reflexed portion dimidiate, imbricate, connate, 0–1 × 1–3 × 0.1 cm.; surface tomentose to finely hirsute, finely concentrically striate, fulvous-chestnut to avellaneous; margin very thin, undulate to lobed, deflexed in dried specimens: context papery thin, concolorous; tubes short, irregular, less than 1 mm.

in length, 1–2 to a mm., teeth ferruginous, compressed, obtuse, somewhat seriate, irregular in size and shape, pulverulent at first: spores globose, smooth, hyaline, 6–7 μ; hyphae pale-ferruginous, 3-4 μ; cystidia none.

TYPE LOCALITY: South Carolina.
HABITAT: Decaying deciduous branches.
DISTRIBUTION: Southern United States.
EXSICCATI: Rav. Fungi Am. *113*; Rav. Fungi Car. **3**: *22*; Rab.-Wint.-Paz. Fungi Eur. *3943*; Ellis, N. Am.Fungi *712*; Ellis & Ev. N. Am. Fungi *2311*.

2. **Cerrenella farinacea** (Fries) Murrill.

Irpex farinaceus Fries, Linnaea **5**: 523. 1830.
Poria portoricensis Fries, Epicr. Myc. 483. 1838. (Type from Porto Rico.)
Hydnum trachyodon Lév. Ann. Sci. Nat. III. **2**: 302. 1846. (Type from Bogota, Colombia.)
Irpex griseofuscus Mont. Syll. Crypt. 174. 1856. (Type from Guiana.)
Irpex coriaceus Berk. & Rav. Grevillea 1: 101. 1872. (Type from South Carolina.)
Daedalea Burserae Pat. Jour. de Bot. 8: 341. 1889. (Type from Martinique.)
Cerrenella coriacea Murrill, Bull. Torrey Club **32**: 361. 1905.

Pileus very thin, soft, flexible, coriaceous, entirely resupinate or effused-reflexed, the reflexed portion dimidiate, imbricate, laterally connate, 0–1 × 1–5 × 0.1 cm.; surface finely concentrically striate, tomentose, umbrinous-chestnut; margin very thin, undulate to lobed, sterile: context membranous, concolorous, papery-thin; tubes short, 1 mm. or less, irregular, 2–3 to a mm., edges thin, fimbriate to lacerate, dentate, separated at a very young stage forming an irpiciform hymenium, yellowish-green to olive and finally cinereous and farinaceous: spores smooth, hyaline, 6–7 × 2.5 μ; basidia hyaline, 15 × 4–5 μ.

TYPE LOCALITY: Brazil.
HABITAT: Decaying limbs of oak and other hardwood trees.
DISTRIBUTION: Tropical America, and northward in the United States to Ohio and Iowa.
EXSICCATI: Rav. Fungi Am. *438*; Ellis, N. Am. Fungi *1105*; Rav. Fungi Car. **3**: *21*.

3. **Cerrenella subcoriacea** Murrill, sp. nov.

Pileus coriaceous, rather flexible, effused-reflexed, the reflexed portion dimidiate, imbricate, often laterally connate, 1–2 × 2–5 × 0.3–0.7 cm.; surface somewhat zonate, finely tomentose to glabrous, dark chestnut-colored; margin entire to lobed, bay, tomentose, very thin: context very thin, less than 1 mm., chestnut-colored, soft, fibrous; tubes often reviving, 2–4 cm. long, umbrinous-chestnut and powdery within, hymenium irregular, daedaleoid to iripiciform, mouths 1–2 to a mm., edges thin, firm, glistening, chestnut-colored to very dark-fuliginous, soon splitting into flat, more or less pointed teeth.

Type collected in Nicaragua, on dead wood, *B. Shimek*.
DISTRIBUTION: Known only from the type locality.

49. **CORIOLOPSIS** Murrill, Bull. Torrey Club 32: 358. 1905.

Hymenophore thin, flexible or rigid, annual, epixylous, sessile, dimidiate, often largely resupinate; surface light-brown to bay-black, zonate, anoderm, rarely encrusted with age, hairy; margin thin: context thin, coriaceous to woody, isabelline to purplish-umbrinous, rarely almost white; hymenium concolorous; tubes small, regular, thin-walled, entire: spores smooth, hyaline.

Type species, *Polyporus occidentalis* Klotzsch.

Pileus isabelline to fulvous.
  Pores inconspicuous; pileus papery-thin, very soft and flexible. 1. *C. crocata*.
  Pores conspicuous.
    Hymenium isabelline; pileus usually thick and firm. 2. *C. occidentalis*.
    Hymenium whitish or grayish, at least until maturity; pileus thin, 1–3 mm., flexible, often narrowly reflexed or entirely resupinate.
      Surface and hymenium whitish to isabelline. 3. *C. rigida*.
      Surface isabelline to fulvous or whitish-cinereous, hymenium murinous to umbrinous. 4. *C. fulvocinerea*.
Pileus wholly or partially darker than fulvous, usually bay-brown or blackish.
  Context isabelline.
    Surface finely tomentose to scabrous. 5. *C. Taylori*.
    Surface densely clothed with long cirriform fibers. 6. *C. cirrifer*.
  Context umbrinous-chestnut.
    Pileus effused, narrowly reflexed.

Tubes large, 2 to a mm., cinereous. 7. *C. vittata.*
Tubes small, 7–8 to a mm., purplish-umbrinous. 8. *C. vibratilis.*
Pileus not effused, or, if so, broadly reflexed.
Surface entirely pure-black, or slightly fuliginous in narrow zones; hymenium grayish-white. 9. *C. nigrocinerea.*
Surface fulvous-umbrinous with bay-black zones, or uniformly dark-bay.
Pileus flexible, tomentose to aculeate. 10. *C. caperata.*
Pileus rigid, tomentose to glabrous; tubes often stratified. 11. *C. subglabrescens.*

1. **Coriolopsis crocata** (Fries) Murrill. Bull. Torrey Club 32: 358. 1905.

Polyporus crocatus Fries, Epicr. Myc. 477. 1838.
Polyporus byrsinus Mont. Pl. Cell. Cuba 391. 1842. — Mont. Syll. Crypt. 167. 1856. (Type from Cuba.)
Polystictus crocatus Fries, Nov. Symb. 91. 1851.

Pileus coriaceous, membranous, flaccid, flexible, elastic, effused-reflexed, sometimes covering the entire under surface of logs, the reflexed portion dimidiate to reniform, applanate, conchate, 0–5 cm. long, 4 to many cm. broad, not exceeding 2 or 3 mm. in thickness; surface densely concentrically striate, somewhat zonate, villose-tomentose, grayish-isabelline or pale-fulvous; margin very thin, pallid, broadly sterile, entire to slightly undulate: context thin, membranous, isabelline, spongy, 1–2 mm. thick; tubes very short and shallow, less than a mm. in length, mouths punctiform, regular, circular, 4–5 to a mm., edges thick, entire, white to isabelline or pale-fulvous: spores smooth, hyaline.

TYPE LOCALITY: Mexico.
HABITAT: Dead deciduous wood.
DISTRIBUTION: Tropical America.
ILLUSTRATIONS: Mont. Pl. Cell. Cuba *pl. 15, f. 3.*

2. **Coriolopsis occidentalis** (Klotzsch) Murrill, Bull. Torrey Club 32: 358. 1905.

Polyporus occidentalis Klotzsch, Linnaea 8: 486. 1833.
? *Polyporus myrrhinus* Kickx, Bull. Acad. Roy. Belg. 5: 370. 1838.
Polyporus lanatus Fries, Epicr. Myc. 490. 1838. (Type from the East Indies.)
Polyporus lenis Lév. Ann. Sci. Nat. III. 9: 123. 1848. (Type from America.)
Polystictus cyclodes homoporus Fries, Nov. Symb. 90. 1851. (Type from the island of St. John.)
Polyporus scorteus Fries, Nov. Symb. 89. 1851. (Type from Pulo-Milu.)

Pileus corky or leathery, dimidiate to reniform, applanate, 3–6 × 5–10 × 0.3–1 cm.; surface concentrically sulcate, zonate, tomentose, grayish-ochraceous to grayish-isabelline, somewhat fading with age; margin thin, velvety, entire: context ochroleucous, subshining, zonate, corky, 1–6 mm. thick; tubes rather short, 2–4 mm. long, isabelline within, mouths circular, slightly irregular at times, 2–4 to a mm., edges rather thick, becoming thin, entire, firm, milk-white when young and fresh, isabelline to ochraceous-fulvous at maturity: spores allantoid, smooth, hyaline, 5–7 × 2–3 μ; hyphae 2–5 μ.

TYPE LOCALITY: St. Vincent, West Indies.
HABITAT: Various kinds of dead wood.
DISTRIBUTION: Tropical regions.

3. **Coriolopsis rigida** (Berk. & Mont.) Murrill.

Trametes rigida Berk. & Mont. Ann. Sci. Nat. III. 11: 240. 1849. Not *Polyporus rigidus* Lév. 1844.
Polystictus extensus Cooke; Sacc. Syll. Fung. 6: 244. 1888.
Polystictus rigens Sacc. & Cub. in Sacc. Syll. Fung. 6: 274. 1888.

Pileus thin, coriaceous, flexible to rigid, effused-reflexed, imbricate, laterally connate, the reflexed portion flabelliform, applanate or conchate, 0.5–3 × 3–6 × 0.1–0.2 cm.; surface spuriously zoned, sometimes zonate behind, concentrically furrowed at times, hirsute to hispid, nearly white to isabelline; margin very thin, pallid, undulate to lobed: context pallid to isabelline, membranous; tubes very short, grayish-isabelline within, mouths fairly regular, circular to slightly angular, 3–4 to a mm., edges white to grayish-white and finally isabelline, rather thick at first, becoming thin, entire and slightly uneven: spores smooth, hyaline.

TYPE LOCALITY: Bahia, Brazil.
HABITAT: Dead wood of various kinds.
DISTRIBUTION: Tropical America, and northward in the United States to Pennsylvania, Missouri, and Texas.
EXSICCATI: Ellis & Ev. N. Am. Fungi *1694*, *1695*; Rav. Fungi Car. 1: *15*; Rav. Fungi Am. *429*.

4. **Coriolopsis fulvocinerea** Murrill, sp. nov.

Pileus coriaceous, flexible to rigid, sessile, dimidiate, imbricate, laterally connate, often decurrent, usually conchate, 2–4 × 3–8 × 0.2–0.4 cm.; surface spuriously zonate, concentrically striate or sulcate, uneven, often plicate, isabelline to fulvous or cinereous, tomentose, scabrous behind; margin very thin, undulate to lobed, tomentose, isabelline to fulvous: context membranous, fibrous, pale-umbrinous, becoming darker with age, about 1–2 mm. thick; tubes short, 1–2 mm. long, cinereous to avellaneous within, mouths minute, regular, circular to angular, 3–4 to a mm., elongated and irregular in larger specimens at times, murinous to umbrinous, edges thin, firm, entire: spores smooth, hyaline.

Type collected at Santa Clara, Cuba, on dead wood in fields and thickets, March 17, 1905, *F. S. Earle & W. A. Murrill 413.*

DISTRIBUTION: Cuba; Jamaica; Hispaniola; St. Croix; Barbados.

5. **Coriolopsis Taylori** Murrill, sp. nov.

Pileus corky, rigid, subimbricate, sessile, dimidiate, conchate, 3–5 × 4–7 × 0.5–1.5 cm.; surface zonate, roughly hispid to scabrous, aculeate behind, somewhat sulcate, finely radiate-striate, subshining and chestnut-colored in zones near the margin and opaque and isabelline-fulvous behind, or entirely multizonate and subshining; margin thin, pallid, tomentose, entire or undulate: context isabelline, distinctly zonate, almost woody, 0.3–1 cm. thick; tubes slender, 2–4 mm. long, circular, umbrinous within, mouths circular, regular, minute, 5–7 to a mm., grayish-umbrinous to fuliginous, edges entire, becoming rather thin, but firm and even: spores smooth, hyaline.

Type collected near Santiago, Cuba, on dead logs, August 25, 1906, *Norman Taylor 1.*

DISTRIBUTION: Honduras; Cuba; Porto Rico; St. John.

6. **Coriolopsis cirrifer** (Berk. & Curt.) Murrill.

Polyporus cirrhiferus Berk. & Curt. Jour. Linn. Soc. **10**: 314. 1868.
Polystictus cirrifer Sacc. Syll. Fung. **6**: 282. 1888.

Pileus rigid, hard, attached by a short tubercle, dimidiate to flabelliform, conchate, 4–6 × 5–8 × 0.5–0.8 cm.; surface densely clothed with cirriform fibers, spuriously zonate, dark-fulvous to chestnut-colored; margin acute, undulate, sterile, pallid: context thin, firm and tough, isabelline, 1–3 mm. thick; tubes slender, avellaneous, 4–5 mm. long, mouths circular, regular, 5 to a mm., edges thick, firm, entire, avellaneous to fuliginous: spores not examined.

TYPE LOCALITY: Cuba.
HABITAT: Dead wood.
DISTRIBUTION: British Honduras; Nicaragua; Cuba.

7. **Coriolopsis vittata** (Ellis & Macbr.) Murrill.

Hexagona vittata Ellis & Macbr.; Ellis & Ev. Bull. Lab. Nat. Hist. Univ. Iowa **4**: 68. 1896.

Pileus very thin, flexible, coriaceous, laterally connate, effused-reflexed, 2–3 × 6–10 cm., the reflexed portion 0.5–1 cm. long, 2 to many cm. broad, scarcely a mm. thick; surface tomentose, zonate, fulvous to bay-black, the zones nearly glabrous; margin very thin, sterile, isabelline, undulate to lobed, deflexed at times: context extremely thin, less than half a mm., tawny-bay, membranous; tubes short, scarcely a mm. long, whitish-cinereous within, mouths large, regular, subhexagonal, 2 to a mm., edges thin, firm, subentire to fimbriate or slightly lacerate, cinereous or grayish to umbrinous: spores not examined.

TYPE LOCALITY: Castillo, Nicaragua.
HABITAT: On the under surface of fallen stems and branches of deciduous trees.
DISTRIBUTION: Known only from the type locality.

8. **Coriolopsis vibratilis** (Berk. & Curt.) Murrill.

Polyporus vibratilis Berk. & Curt. Jour. Linn. Soc. **10**: 314. 1868.

Pileus resupinate to shortly reflexed, thin, corky, 1–3 mm. thick; surface finely tomentose, gilvous-umbrinous, azonate, anoderm; margin sterile, rather thick, entire or undulate: context membranous, 1 mm. in diameter, soft-corky, purplish-umbrinous; tubes short, 1–2 mm., avellaneous within, mouths minute, regular, hexagonal, glistening, stuffed when

young, 7-8 to a mm., edges very thin, entire or slightly toothed, purplish-umbrinous: spores smooth, hyaline.

TYPE LOCALITY: Cuba.
HABITAT: Dead wood.
DISTRIBUTION: Known only from the type locality.

9. **Coriolopsis nigrocinerea** Murrill, sp. nov.

Pileus attached by a scutate disc or small tubercle, dimidiate to circular, subimbricate, thin, coriaceous, 2–3 × 3–5 × 0.2–0.5 cm.; surface hispid, tomentose, zonate, concentrically striate, fuliginous to pure-black; margin pallid, thin, entire to undulate, velvety: context membranous, fibrous, umbrinous to fuliginous, 1–2 mm. thick; tubes short, 1–2 mm. long, chalk-white within, mouths circular to angular, becoming more or less irregular and uneven, about 3 to a mm., edges avellaneous to cinereous, firm, subentire, rather thin: spores smooth, hyaline.

Type collected on the top of El Yunque, Cuba, on an old pole, March, 1903, *L. M. Underwood & F. S. Earle 1234*.
DISTRIBUTION: Known only from the type locality.

10. **Coriolopsis caperata** (Berk.) Murrill.

Polyporus caperatus Berk. Ann. Mag. Nat. Hist. 3: 391. 1839.
Trametes dibapha Berk. Vidensk. Meddel. 1879–80: 32. 1879. (Type from Brazil.)

Pileus thin, coriaceous, flexible, dimidiate to flabelliform, sessile, narrowly attached, often laterally connate and subimbricate, sometimes decurrent, 4–7 × 5–8 × 0.2–0.3 cm.; surface conspicuously tomentose, becoming aculeate, zonate, especially with age, uneven, isabelline to umbrinous, with bay or blackish zones; margin thin, undulate to lobed, sterile, almost white: context thin, punky above, corky below, umbrinous-chestnut, 2–4 mm. thick; tubes short, avellaneous within, 1–2.5 mm. long, mouths circular to subangular, regular, even, 3–4 to a mm., edges rather thick, firm, entire, pale-isabelline or grayish-avellaneous to pale-umbrinous: spores 8–10 × 3–4 μ; hyphae 3 μ.

TYPE LOCALITY: Mauritius.
HABITAT: Dead wood.
DISTRIBUTION: West Indies and Central America; also in South America and tropical regions of Africa and Asia.

11. **Coriolopsis subglabrescens** Murrill, sp. nov.

Pileus slightly flexible to rigid, sometimes reviving for several seasons and presenting the appearance of a very thin *Pyropolyporus*, dimidiate to reniform, narrowly attached, decurrent, usually applanate, 4–6 × 7–12 × 0.4–1 cm.; surface tomentose, sulcate, umbrinous to bay or blackish, becoming glabrous and bay-black; margin pallid, entire, acute: context thin, corky, purplish-umbrinous, 2–3 mm. thick, becoming indurate and blackish-encrusted above with age; tubes grayish-umbrinous, often stratose, especially behind, 2–4 mm. long, mouths circular, minute, regular, 5–6 to a mm., edges thick, entire, firm, avellaneous-isabelline to pale-umbrinous: spores smooth, hyaline.

Type collected on Pine Hill, Cuba, on a small dead stub, March, 1903, *L. M. Underwood & F. S. Earle 1329*.
DISTRIBUTION: Cuba, Porto Rico, and Jamaica.

DOUBTFUL SPECIES

Polyporus Swartzianus Lév. Ann. Sci. Nat. III. 5: 132. 1846. Described from Swartz's Jamaican collections. Type not found.

Polystictus corrugis Fries, Nov. Symb. 82. 1851. Collected by Benson on trunks of trees in the West Indies.

Polystictus cascus Fries, Nov. Symb. 88. 1851. Described from Oersted's collections in Costa Rica. Type specimen not found.

Polystictus comatus Fries, Nov. Symb. 91. 1851. Described from specimens collected on trunks at San José, Costa Rica, by Oersted. Type specimen not found.

50. **FUNALIA** Pat. Tax. Hymén. 95. 1900.

Hymenophore annual, epixylous, sessile, dimidiate, often semi-resupinate; surface anoderm, hairy to aculeate: context light-brown, more or less duplex, spongy above, coriaceous to woody below; tubes usually large, thin-walled, more or less lacerate: spores smooth, hyaline.

Type species, *Funalia Mons-Veneris* (Jungh.) Pat.

Context very thin, 1–2 mm.
- Surface villose, with simple hairs; hymenium pale rose-tinted when fresh. 1. *F. villosa.*
- Surface strigose, with branched hairs; hymenium pallid to brown. 2. *F. cladotricha.*

Context usually quite thick, 3–15 mm.
- Surface hispid. 3. *F. hispidula.*
- Surface villose or hirsute. 4. *F. stuppea.*
- Surface aculeate. 5. *F. aculeifer.*

1. **Funalia villosa** (Sw.) Murrill, Bull. Torrey Club **32**: 356. 1905.

Boletus villosus Sw. Prodr. 148. 1788.—Sw. Fl. Ind. Occ. **3**: 1923. 1806.
Favolus villosus Fries, Syst. Myc. 1: 344. 1821.
Polyporus villosus Fries, Epicr. Myc. 475. 1838.

Pileus effused-reflexed, imbricate, laterally connate, coriaceous, the reflexed portion 2–3 × 3–6 × 0.3–0.8 cm.; surface villose, spuriously and opaquely zoned, grayish-white, becoming umbrinous to ferruginous behind with age; margin thin, acute, concolorous, undulate to lobed: context pallid, very thin, membranous, fibrous, scarcely a mm. thick; tubes slender, 5–7 mm. long, isabelline within, mouths very variable in size and shape, 0.5–2 mm. broad, circular to angular or slightly daedaleoid, edges thin, entire to toothed, grayish-isabelline, pale rose-tinted when fresh: spores oblong-allantoid, smooth, hyaline, scanty, 6–8 × 2-4 μ; hyphae 2–2.5 μ.

TYPE LOCALITY: Jamaica.
HABITAT: Dead deciduous and coniferous wood.
DISTRIBUTION: Florida, Louisiana, and tropical America.
EXSICCATI: Ellis & Ev. N. Am. Fungi *2307*.

2. **Funalia cladotricha** (Berk. & Curt.) Murrill, Bull. Torrey Club **32**: 357. 1905.

Polyporus cladotrichus Berk. & Curt. Jour. Linn. Soc. **10**: 309. 1868.

Pileus dimidiate, sessile, sometimes effused-reflexed, 2–5 × 3–8 × 0.5–0.8 cm.; surface brown, conspicuously covered with branched, strigose hairs, which are somewhat concentrically arranged in zones, especially near the margin, which is thin, concolorous, undulate: context thin, soft-corky to spongy, brown, 1–2 mm. thick; tubes long, uneven, irregular and variable in size, grayish-brown within, 3–7 mm. long, mouths angular to daedaleoid, averaging 1 mm. in breadth, edges thin, uneven to lacerate-toothed, brown or grayish-umbrinous: spores smooth, hyaline.

TYPE LOCALITY: Cuba.
HABITAT: Dead wood.
DISTRIBUTION: Texas; Cuba.

3. **Funalia hispidula** (Berk. & Curt.) Murrill.

Trametes hispidulus Berk. & Curt. Jour. Linn. Soc. **10**: 319. 1868.
Hapalopilus hispidulus Murrill, Bull. Torrey Club **31**: 419. 1904.

Pileus small, undulate, dimidiate, sessile, 1–2 × 2–4.5 × 0.5–1 cm.; surface ferruginous-umbrinous, hispid, azonate, anoderm; margin thick, at least when young, subtomentose, slightly paler, sterile: context zonate, fibrose-corky, shining-isabelline, 3–7 mm. thick; tubes concolorous with the context, short, mouths circular and widely separated by thick dissepiments when young, 0.5–1 mm. broad, pale-ferruginous, becoming darker with age: spores smooth, hyaline.

TYPE LOCALITY: Cuba.
HABITAT: Dead wood.
DISTRIBUTION: Known only from the type locality.

4. **Funalia stuppea** (Berk.) Murrill, Bull. Torrey Club **32**: 356. 1905.

Trametes stuppeus Berk. Ann. Mag. Nat. Hist. **7**: 453. 1841.
Polyporus Lindheimeri Berk. & Curt. Grevillea **1**: 50. 1872. (Type from Texas.)
Trametes Peckii Kalchb. Bot. Gaz. **6**: 274. 1881. (Type from Dakota.)

Pileus corky to woody, variable in size, dimidiate, sessile, decurrent, imbricate, convex above, 2–6 × 5–12 × 0.5–3 cm.; surface ferruginous to fulvous, hirsute to villose, azonate, sulcate at times; margin thin or rounded, concolorous, entire or slightly undulate: context isabelline, zonate, corky to woody, duplex in large specimens, being softer above, 0.3–1.5 cm. thick; tubes rather long, 3–12 mm., whitish-isabelline within, mouths rather variable in size, subcircular to angular, distorted with age, averaging about 1 mm. in diameter, edges thin, fimbriate to toothed, isabelline to fuscous: spores oblong or slightly curved, smooth, hyaline, 11–13 × 3.5–4 μ.

TYPE LOCALITY: Carlton House, British North America.
HABITAT: Dead poplar trunks.
DISTRIBUTION: Temperate North America.
EXSICCATI: Ellis & Ev. N. Am. Fungi *2106*; Ellis & Ev. Fungi Columb. *502*.

5. **Funalia aculeifer** (Berk. & Curt.) Murrill.

Trametes aculeifer Berk. & Curt. Jour. Linn. Soc. **10**: 319. 1868.
Polystictus Hariotianus Speg. Rev. Myc. **11**: 94. 1889. (Type from Paraguay.)

Pileus irregularly effused to imbricate and dimidiate, triangular in section, 0.5–1 × 1–2 × 0.5–1.5 cm.; surface isabelline, very uneven, broken up into projections, which vary in size and are decorated with rigid cylindrical or flattened latericeous aculeae; margin thin, pallid, often indefinite or very irregular: context white, spongy, 0.5–1 mm. thick, penetrated by the aculeae; tubes very irregular in size and shape, 2–3 mm. long, white within, mouths polygonal to radially elongate, averaging about 1 mm. in width, edges thin, uneven to toothed or lacerate.

TYPE LOCALITY: Cuba.
HABITAT: Dead wood.
DISTRIBUTION: Cuba; also in South America.

DOUBTFUL SPECIES.

Trametes mexicana Berk. & Curt. in Berk. Jour. Linn. Soc. **9**: 423. 1867. Described from Botteri's collections near Orizaba, Mexico. The type specimens at Kew are in very poor condition. The size of the tubes suggests this genus rather than *Coriolopsis*.

Ceriomyces mexicanus de Seynes, Bull. Soc. Myc. Fr. **6**: 102. 1890. An abnormal species resembling members of the genus *Funalia*. More material is necessary in order to locate it definitely.

51. **TRICHAPTUM** Murrill, Bull. Torrey Club **31**: 608. 1904.

Hymenophore annual, epixylous, sessile, dimidiate: context brown, firm and leathery below, very loosely fibrous and darker above; tubes short, thin-walled, mouths polygonal, at times becoming labyrinthiform: spores smooth, hyaline.

Type species, *Polyporus trichomallus* Berk. & Mont.

1. **Trichaptum trichmoallum** (Berk. & Mont.) Murrill, Bull. Torrey Club **31**: 608. 1904.

? *Polyporus Perrottetii* Lév. Ann. Sci. Nat. III. **6**: 195. 1844. (Type from Java.)
Polyporus trichomallus Berk. & Mont. Ann. Sci. Nat. III. **11**: 238. 1849.
? *Polyporus endothrix* Berk. Jour. Bot. & Kew Misc. **8**: 197. 1856. (Type from Brazil.)
Funalia trichomalla Pat. Tax. Hymén. 95. 1900.

Pileus effused-reflexed, laterally connate, sometimes covering the entire under surface of dead logs, the reflexed portion dimidiate, conchate, 1–10 cm. long, 5 to many cm. broad, 5–10 mm. thick, thicker by overlapping; surface fuliginous to almost black, some-

times zonate, very conspicuously ornamented with long intricately-branched hairs; margin thin, sterile, concolorous, somewhat inflexed on drying: context light-brown, membranous below, very loosely fibrous and darker above, the entire plant, with the exception of the tubes and the very thin layer to which they are attached, being composed of the loose branched fibers mentioned above; tubes short, 1–3 mm. long, avellaneous within, mouths angular, often irregular and sometimes daedaleoid, about 0.5 mm. broad, edges thin, entire, avellaneous, soon becoming lacerate or irpiciform.

TYPE LOCALITY: Guiana.
HABITAT: Dead wood.
DISTRIBUTION: Central America; Cuba; Jamaica; also in South America.

52. **HAPALOPILUS** Karst. Rev. Myc. 3^9: 18. 1881.

Hymenophore annual, rarely perennial, epixylous, sessile, dimidiate, simple or imbricate; surface anoderm, rarely pelliculose, zonate or azonate, usually brown and glabrous: context brown, leathery or corky, tough or rarely friable when dry; hymenium usually differently colored, tubes small, thin-walled: spores small, usually ovoid, hyaline.

Type species, *Hapalopilus nidulans* (Fries) Karst.

Hymenium concolorous; pileus smooth, entirely devoid of zones or furrows; context soft and friable, spores 2.5 × 3.5 μ. — 1. *H. rutilans.*
Hymenium differently colored; pileus rarely smooth; context rigid or corky, not friable.
  Hymenium lilac-colored, tubes 1 cm. or more in length; pileus concentrically sulcate. — 2. *H. sublilacinus.*
  Hymenium dark-brown, tubes less than 0.5 cm. in length; pileus smooth or zonate.
    Context rigid; pileus azonate or with few and indefinite markings. — 3. *H. gilvus.*
    Context flexible when sporophore is expanded; pileus plainly and definitely multizonate. — 4. *H. licnoides.*

1. **Hapalopilus rutilans** (Pers.) Murrill, Bull. Torrey Club **31**: 416. 1904.

Boleteus subrosus Bull. Herb. Fr. **11**: 354. 1791. Not *B. suberosus* L. 1753.
Boletus rutilans Pers. Ic. Descr. Fung. 18. 1798.
Polyporus nidulans Fries, Syst. Myc. **1**: 362. 1821. (Type from Sweden.)
Polyporus rutilans Fries, Syst. Myc. **1**: 363. 1821.
Polyporus pallido-cervinus Schw. Trans. Am. Phil. Soc. II. **4**; 156. 1832. (Type from Pennsylvania.)
Hapalopilus nidulans Karst. Rev. Myc. 3^9: 18. 1881.
Inonotus nidulans Karst. Finl. Basidsv. 332. 1889.

Pileus thick, convex above and below, very soft, fleshy, dimidiate, usually broadly attached, more or less imbricate at times, 2–4 × 3.5–7 × 0.5–1.5 cm.; surface smooth, anoderm, azonate, finely villose to glabrous, ochraceous-isabelline to bay-brown; margin rather thick, entire or undulate, becoming reddish-brown when bruised: context spongy, friable when dry, ochraceous-isabelline, homogeneous, 3–7 mm. thick; tubes rather long, slender, isabelline to pale-fulvous, 3–6 mm. long, mouths angular, averaging 3 to a mm., somewhat irregular with age, edges isabelline, whitish when young, thin, very fragile, subentire: spores ellipsoid or globose, smooth, hyaline, 3 × 2.5 μ.

TYPE LOCALITY: Europe.
HABITAT: Dead wood of deciduous trees.
DISTRIBUTION: Temperate North America; also in Europe.
ILLUSTRATIONS: Bull. Herb. Fr. *pl. 482*; Pers. Ic. Descr. Fung. *pl. 6, f. 3.*

2. **Hapalopilus sublilacinus** (Ellis & Ev.) Murrill, Bull. Torrey Club **31**: 417. 1906.

Mucronoporus sublilacinus Ellis & Ev. Bull. Torrey Club **27**: 50. 1900.

Pileus applanate, dimidiate, 6–7 × 9–10 × 1–2 cm.; surface concentrically striate, zonate, cinereous-gray to avellaneous-fulvous; margin acute, entire: context corky, zonate, 3–5 mm. thick, bright cinnamon-yellow to pale-fulvous; tubes long, slender, pale-umbrinous within, 5–15 mm., mouths minute, circular, regular, slightly uneven, 5 to a mm.,

edges obtuse, entire, lilac to umbrinous: spores smooth, hyaline; spines stout, cylindrical-conical, 15–20 × 4 μ.

TYPE LOCALITY: Louisiana.
HABITAT: Dead pine logs.
DISTRIBUTION: Known only from the type locality.

3. **Hapalopilus gilvus** (Schw.) Murrill, Bull. Torrey Club **31**: 418. 1904.

Boletus gilvus Schw. Schr. Nat. Ges. Leipzig **1**: 96. 1822.
Polyporus gilvus Fries, Elench. Fung. 104. 1828.
? *Polyporus calvescens* Berk. Ann. Nat. Hist. **3**: 390. 1839. (Type from New Orleans, Louisiana.)
Polyporus omalopilus Mont. Pl. Cell. Cuba 423. 1842. (Type from Cuba.)
? *Polyporus endozonus* Fries, Nov. Symb. 54. 1851. (Type from the island of St. John.)
Polyporus carneofulvus Berk.; Fries, Nov. Symb. 68. 1851.
? *Trametes Petersii* Berk. & Curt. Grevillea **1**: 66. 1872. (Type from Alabama.)
Polyporus breviporus Cooke, Grevillea **12**: 7. 1883. (Type from Australia.)
Polystictus purpureofuscus Cooke, Grevillea **15**: 24. 1886. (Type from South Carolina.)
Polyporus aureomarginatus P. Henn. Bot. Jahrb. **22**: 72. 1895. (Type from Kamerun.)

Pileus corky, dimidiate, sessile, imbricate, applanate or conchate, 3–6 × 5–10 × 0.5–1.5 cm.; surface finely tomentose to glabrous, azonate, isabelline to fulvous, often marked with indistinct purplish-fuscous bands, rugulose to uneven; margin thin, ferruginous, entire to undulate, abruptly sterile: context ferruginous, fibrous-spongy to corky, zonate, 3–7 mm. thick; tubes short, slender, avellaneous to grayish-umbrinous within, 3–5 mm. long, often found stratified, especially in the tropics, mouths small, regular, circular to angular, 6–8 to a mm., edges at first thick, pale-ferruginous, becoming thin, entire, glistening, olivaceous-fuscous to purplish-fuscous: spores elongate-ellipsoid, smooth, hyaline, 4–6 × 2–4 μ; spines chestnut-colored, ovate-subulate, 15–20 × 4–5 μ; hyphae 2–4 μ.

TYPE LOCALITY: North Carolina.
HABITAT: Decayed wood of deciduous trees.
DISTRIBUTION: Cosmopolitan.
EXSICCATI: Rab.-Wint. Fungi Eur. *3431*; Ellis & Ev. Fungi Columb. *603*; Ellis, N. Am. Fungi *310*; Rav. Fungi Am. *420*.

4. **Hapalopilus licnoides** (Mont.) Murrill, Bull. Torrey Club **31**: 417. 1904.

Polyporus licnoides Mont. Pl. Cell. Cuba 401. 1842.
? *Polyporus spurcus* Lév. Ann. Sci. Nat. III. **5**: 135. 1846. (Type from Guadeloupe.)
Polystictus licnoides Fries, Nov. Symb. 92. 1851.
Polystictus subglaber Ellis & Macbr. Bull. Lab. Nat. Hist. Univ. Iowa **3**[2]: 192. 1896. (Type from Nicaragua.)

Pileus thin, coriaceous, flexible, imbricate, dimidiate, often narrowly attached, applanate or conchate, 3–6 × 4–8 × 0.2–0.5 cm.; surface multizonate, concentrically striate, finely tomentose to partially glabrous, rather smooth, subshining, fulvous, with bay zones; margin very thin, entire, ferruginous: context thin, ferruginous to fulvous, fibrose-spongy, 1 mm. thick; tubes short, 1–2 mm., fulvous, glaucous near the mouths, which are very minute, regular, circular, 7–9 to a mm., edges thick, entire, pale-ferruginous to purplish-ferruginous: spores ellipsoid or subglobose, smooth, hyaline, 3–4 × 2–3 μ; spines subulate, chestnut-colored, 15–25 × 6 μ; hyphae 2–4 μ.

TYPE LOCALITY: Cuba.
HABITAT: Dead wood of various kinds.
DISTRIBUTION: Tropical America; Gulf States; also in tropical Asia.
ILLUSTRATION: Mont. Pl. Cell. Cuba *pl. 16, f. 2*.

DOUBTFUL SPECIES

Polyporus sordidus Berk.; Fries, Nov. Symb. 80. 1851. Not *Polyporus sordidus* Lév. Ann. Sci. Nat. III. **2**: 192. 1844. *Polyporus sordidulus* Cooke, Trans. Bot. Soc. Edinb. **13**: 153. 1878. Described from Oersted's collections in Costa Rica. Allied to *H. gilvus*, but said to differ in tubes and trama. Type specimen not found.

Polyporus dorcas Berk. Ann. Mag. Nat. Hist. II. **9**: 195. 1852. Described from San Domingo, collected by Sallé. It somewhat resembles *Bjerkandera subsimulans*.

53. **ISCHNODERMA** Karst. Medd. Soc. Faun. Fl. Fenn. **5**: 38. 1879.

Hymenophore large, annual, epixylous, sessile; surface pelliculose, glabrous: context light-brown, fleshy to slightly corky, friable when dry; tubes small, thin-walled: spores smooth, hyaline.

Type species, *Ischnoderma resinosum* (Schrad.) Karst.

1. **Ischnoderma fuliginosum** (Scop.) Murrill, Bull. Torrey Club **31**: 606. 1904.

Boletus fuliginosus Scop. Fl. Carn. ed. 2. **2**: 470. 1772.
Boletus rubiginosus Schrad. Spic. Fl. Ger. 168. 1794. (Type from Germany.)
Boletus resinosus Schrad. Spic. Fl. Ger. 171. 1794. (Type from Germany.)
Trametes benzoina Fries, Epicr. Myc. 489. 1838.
Ischnoderma resinosum Karst. Medd. Soc. Faun. Fl. Fenn. 5: 38. 1879.

Pileus very large, subimbricate, laterally connate, effused-reflexed, often covering the entire under surface of logs, the reflexed portion applanate, 5–15 cm. long, 10 to many cm. broad, 1–2.5 cm. thick; surface pelliculose, floccose, rugose, zonate, fuliginous, ivory-black and dark-fulvous, with a conspicuous resinous appearance; margin acute, concolorous, inflexed on drying, entire or undulate: context fleshy, becoming corky with age, very firm and rather fragile when dry, light-brown, 5–10 mm. thick; tubes pallid to umbrinous, 5–8 mm. long, mouths minute, white, angular, equal, becoming umbrinous and somewhat irregular with age, edges thin, fimbriate to lacerate: spores smooth, cylindrical, subcurved, hyaline, 4–6 × 1.5–2 μ.

TYPE LOCALITY: Carniola.
HABITAT: Fallen trunks of basswood, maple, fir, spruce, and certain other trees.
DISTRIBUTION: Canada to Florida and west to Wisconsin; also in Europe.
ILLUSTRATION: Fries, Ic. Hymen. *pl. 483, f. 2.*
EXSICCATI: Ellis & Ev. N. Am. Fungi *406*; Shear, N. Y. Fungi *112*; Rab.-Wint. Fungi *3332*; Kellerm. Ohio Fungi *105*; Ellis & Ev. Fungi Columb. *203*, *1304*; Linhart, Fungi Hung. *447*; Thüm. Fungi Austr. *713*; Krieger, Fungi Sax. *525*; Thüm. Myc. Univ. *1103*.

54. **ANTRODIA** Karst. Medd. Soc. Faun. Fl. Fenn. **5**: 40. 1879.

Hymenophore small, annual, epixylous, sessile or semiresupinate; surface zonate, encrusted, glabrous: context thin, light-brown, fibrous; tubes short, firm, thin-walled: spores smooth, hyaline.

Type species, *Antrodia mollis* (Sommerf.) Karst.

1. **Antrodia mollis** (Sommerf.) Karst Medd. Soc. Faun. Fl. Fenn. **5**: 40. 1879.

Daedalea mollis Sommerf. Suppl. Fl. Lapp. 271. 1826.
Trametes stereoides Bres. Atti Accad. Roveret. III. **3**: 92. 1897.

Pileus sessile or semiresupinate, often broadly effused, the reflexed portion irregular, imbricate, conchate, often plicate, 1–2 cm. long, 2–8 cm. broad, less than 5 mm. thick; surface light-brown to umbrinous or black, encrusted, conspicuously multizonate, finely tomentose to glabrous, eneven; margin acute, rather thick, sterile, pale-brown, finely tomentose: context very thin, membranous, light-brown next to the tubes, fulvous above with a black line between; tubes very variable in size and shape, avellaneous within, 2–4 mm. long, mouths circular to sinuous, 1–3 to a mm., edges rather thick, firm, entire, often splitting into flat teeth in old plants: spores elongate-ellipsoid, smooth, hyaline, 9–11 × 4–5 μ; hyphae 2 μ thick.

TYPE LOCALITY: Lapland.
HABITAT: Dead deciduous wood.
DISTRIBUTION: Temperate North America and Europe.
EXSICCATI: Thüm. Myc. Univ. *2004*; Ellis & Ev. N. Am. Fungi *2506*; Rab.-Wint. Fungi Eur. *3739*.

55. **FAVOLUS** Beauv. Fl. Oware **1**: 1. *pl. 1.* 1805.

Scenidium Kuntze, Rev. Gen. 515. 1893.

Hymenophore small, annual, epixylous, sessile, dimidiate or reniform; surface azonate or multizonate; margin usually thin: context thin, leathery, isabelline or fulvous; tubes alveolar: spores smooth, hyaline.

Type species, *Favolus hirtus* Beauv.

Pileus less than 1 cm. thick.
  Surface marked with white and light-brown zones. 1. *F. tenuis.*
  Surface variegated with dark-brown and purple zones. 2. *F. variegatus.*
Pileus 2–3 cm. thick; surface azonate. 3. *F. leprosus.*

1. **Favolus tenuis** (Hook.) Murrill, Bull. Torrey Club **32**: 100. 1905.

Boletus reticulatus Hook. in Kunth, Syn. Pl. **1**: (9). 1822. (Type from the Andes.) Not *B. reticulatus* Schaeff.
Boletus tenuis Hook. in Kunth, Syn. Pl. **1**: (10). 1822.
Polyporus bivalvis Pers.; Gaud. Voy. Freyc. Bot. 168. 1826. (Type from Rawak.)
Polyporus polygrammus Mont. Ann. Sci. Nat. II. **8**: 365. 1837. (Type from Cuba.)
Hexagona orbiculata Fries, Fungi Guin. *f. 9.* 1837. (Type from Guinea.)
Hexagona cervino-plumbea Jungh. Crypt. Javae 61. *pl. 15, f. 32.* 1838. (Type from Java.)
Hexagona polygramma Fries, Epicr. Myc. 497. 1838.—Mont. Pl. Cell. Cuba 379. *pl. 14, f. 3.* 1842. (Type from Cuba.)
Hexagona tenuis Fries, Epicr. Myc. 498. 1838.
Hexagona cingulata Lév. Ann. Sci. Nat. III. **2**: 200. 1844. (Type from Hispaniola.)
Hexagona similis Berk. Lond. Jour. Bot. **5**: 4. 1846. (Type from Australia.)
? *Hexagona unicolor* Fries, Nov. Symb. 101. 1851. (Type from Tropical America.)
Hexagona Thwaitesii Berk. & Curt. Proc. Am. Acad. **4**: 122. 1860. (Type from Bonin Island.)
Hexagona favoloides Peck, Bull. Torrey Club **10**: 73. 1883. (Type from the Roatan Islands, Honduras.)
Hexagona tenuis subtenuis Cooke, Grevillea **19**: 103. 1891. (Type from Central America.)

Pileus coriaceous, reniform, conchate or applanate, narrowly attached behind, 3–6 × 5–11 × 0.1–0.3 cm.; surface glabrous, polished, pale wood-colored to avellaneous-umbrinous, repeatedly narrowly zonate; margin very thin, usually entire or slightly undulate: context membranous, pale-isabelline, 0.5–1 mm. thick; tubes very short, 1–2 mm. long, avellaneous within, mouths alveolar, circular to hexagonal, exceedingly variable in size in different collections, averaging 0.5–1 mm. in diameter, edges rather thick, firm, entire.

TYPE LOCALITY: Between Popayan and Almaguer, Colombia.
HABITAT: Dead deciduous wood.
DISTRIBUTION: Tropical regions.
ILLUSTRATION: Mont. Pl. Cell. Cuba *loc. cit.*

2. **Favolus variegatus** (Berk.) Murrill, Bull. Torrey Club **32**: 101. 1905.

? *Hexagona papyracea* Berk. Ann. Mag. Nat. Hist. **10**: suppl. 379. 1843. (Type from Brazil.)
Hexagona variegata Berk. Ann. Mag. Nat. Hist. II. **9**: 196. 1852.—Proc. Am. Acad. **4**: 122. 1858.

Pileus dimidiate to reniform, thin, coriaceous, 4–6 × 8–12 × 0.1–0.4 cm.; surface radiate-rugose, multizonate, velvety, becoming glabrous, chestnut-colored, variegated with chocolate-brown or bay-brown tints; margin very thin, slightly paler, blackening when bruised, entire to lobed: context very thin, 1 mm. or less thick, fibrous, isabelline to umbrinous; tubes very short, pale-umbrinous within, scarcely a mm. long, alveolar, subcircular to hexagonal, 1–2 to a mm., edges rather thick, firm, even, pallid to pale-umbrinous: spores smooth, hyaline; hyphae 2–4 μ.

TYPE LOCALITY: Santo Domingo.
HABITAT: Dead wood.
DISTRIBUTION: Tropical America.

3. **Favolus leprosus** (Fries) Murrill.

Hexagona leprosa Fries, Nov. Symb. 101. 1851.

Pileus thick, pulvinate, undulate, narrowly attached and nearly circular to dimidiate, 5–12 cm. broad, 3–5 cm. thick; surface nearly smooth, azonate, short-tomentose in spots, finally glabrous, fulvous in dried specimens; margin thin, concolorous, dark-colored when

bruised: context soft, punky, homogeneous, isabelline to pale-umbrinous, 2 mm. thick in front, about 1 cm. thick behind; tubes long and large, isabelline when young, 1.5–2 cm. in length, mouths alveolar, about 2 mm. broad, becoming irregular and lacerate with age, edges thin, uneven, at length deeply toothed: spores not examined.

TYPE LOCALITY: Island of St. John, West Indies.
HABITAT: Dead wood.
DISTRIBUTION: St. John; also in Brazil.

56. FLAVIPORUS Murrill, Bull. Torrey Club 32: 360. 1905.

Hymenium annual, often reviving, epixylous, sessile, dimidiate, imbricate; surface encrusted, glabrous: context thick, woody, brown; hymenium yellow to orange; tubes thin-walled, minute, regular: spores smooth, hyaline.

Type species, *Polyporus rufoflavus* Berk. & Curt.

Hymenium pale lemon-yellow. 1. *F. rufoflavus.*
Hymenium deep orange-colored. 2. *F. crocitinctus.*

1. Flaviporus rufoflavus (Berk. & Curt.) Murrill, Bull. Torrey Club 32: 360. 1905.

Polyporus rufoflavus Berk. & Curt. Jour. Linn. Soc. 10: 310. 1868.

Pileus dimidiate, 1 × 2–3 × 0.1–0.4 cm.; surface rufous, thinly encrusted, finely pubescent to glabrous, polished, zonate; margin thin, undulate: context thin, pallid, less than 1 mm. thick; tubes slender, 1–2 mm. long, yellowish, mouths very minute, angular, citrinous, 7–10 to a mm., edges thin, entire: spores smooth, hyaline.

TYPE LOCALITY: Cuba.
HABITAT: Decaying wood.
DISTRIBUTION: Tropical America.

2. Flaviporus crocitinctus (Berk. & Curt.) Murrill, Bull. Torrey Club 32: 360. 1905.

Polyporus crocitinctus Berk. & Curt. Jour. Linn. Soc. 10: 311. 1868.

Pileus hard, rigid, dimidiate, laterally connate, subimbricate, 3 × 5 × 0.3–0.5 cm.; surface brown to black, thinly encrusted, sulcate, zonate, rugose, finely tomentose to glabrous, subshining; margin thin, finely tomentose, yellowish, lobed in type specimens: context thin, fibrous, flavous to luteous, scarcely 1 mm. thick; tubes slender, 2–4 mm. long, yellow to ferruginous, mouths circular to angular, stuffed when young, 4–5 to a mm., edges thin, entire, flavous to luteous: spores smooth, hyaline.

TYPE LOCALITY: Cuba.
HABITAT: Decaying wood.
DISTRIBUTION: Known only from the type locality.

57. POGONOMYCES Murrill, Bull. Torrey Club 31: 609. 1904.

Hymenophore annual, epixylous, dimidiate-sessile to flabelliform, thickly covered with rigid hairs: context dark-brown, punky to corky; tubes short, thick-walled, light-brown, mouths small, circular: spores smooth, hyaline.

Type species, *Boletus hydnoides* Sw.

1. Pogonomyces hydnoides (Sw.) Murrill, Bull. Torrey Club 31: 609. 1904.

Boletus hydnoides Sw. Prodr. 149. 1788.—Fl. Ind. Occid. 3: 1924. 1806.
Boletus hydnatinus Bosc, Ges. Nat. Freunde Berlin Mag. 5: 84. *pl. 4. f. 3.* 1811. (Type from Carolina.)
Polyporus pellitus G. Meyer, Fl. Esseq. 304. 1818. (Type from Guiana.)
Boletus crinitus Spreng. Sv. Vet.-Acad. Handl. 1820: 51. 1820. (Type from Porto Rico.)
Boletus fibrosus Hook. in Kunth, Syn. Pl. 1: (10). 1822. (Type from the Andes.)
Trametes ocellata Berk. & Curt. Jour. Linn. Soc. 10: 319. 1868. (Type from Cuba.)
Polyporus Feathermanni Rav. Grevillea 6: 130. 1877. (Type from Florida.)

Pileus dimidiate, sessile, often imbricate, conchate, 3–5 × 5–10 × 0.5–1 cm.; surface zonate, tawny-bay to nearly black, conspicuously and thickly covered with rigid, branched

fibers, which often more or less disappear with age; margin entire or undulate, pallid, acute, sterile below: context fulvous at maturity, zonate, punky to corky, 3–5 mm. thick; tubes rather long, grayish-umbrinous within, equaling the thickness of the context, mouths small, circular to somewhat angular, 3–4 to a mm., edges thick, entire, pallid to umbrinous: spores oblong, smooth, hyaline, 8–10 × 3–4 μ.

TYPE LOCALITY: Jamaica.
HABITAT: Various forms of dead wood.
DISTRIBUTION: Gulf States and tropical America.
ILLUSTRATION: Bosc, *loc. cit.*
EXSICCATI: Ellis, N. Am. Fungi *505*; Rav. Fungi Am. *6*; Roum. Fungi Sel. *4018*.

58. **NIGROPORUS** Murrill, Bull. Torrey Club **32**: 361. 1905.

Hymenium annual, epixylous, dimidiate-sessile to flabelliform, glabrous: context dark-brown, firm, homogeneous; tubes short, slender, thin-walled, black: spores smooth, hyaline.

Type species, *Polyporus vinosus* Berk.

1. **Nigroporus vinosus** (Berk.) Murrill, Bull. Torrey Club **32**: 361. 1905.

Polyporus vinosus Berk. Ann. Mag. Nat. Hist. II. 9: 195. 1852.

Pileus thin, dimidiate to reniform, imbricate, narrowly attached by a scutate disc or laterally connate and broadly decurrent, 1–3 × 3–6 × 0.1–0.3 cm.; surface zonate, finely velvety to glabrous, obscurely vinous-brown; margin yellowish when young, thin, undulate, often inflexed on drying: context rigid, tough, homogeneous, chestnut-colored, 1–2 mm. thick; tubes minute, short, scarcely a mm. in length, smoky-black, mouths regular, angular, 7–9 to a mm., edges thin, entire, vinous-brown, pruinose when young, blackish with age: spores allantoid, smooth, hyaline, 3–4 × 1–1.5 μ; hyphae 2.5–3.5 μ.

TYPE LOCALITY: Santo Domingo.
HABITAT: Decaying wood.
DISTRIBUTION: Georgia; Cuba; Santo Domingo.

59. **CYCLOPORELLUS** Murrill, Bull. Torrey Club **34**: 468. 1907.

Hymenophore annual, tough, epixylous, sessile, anoderm, zonate: context thin, fibrous-brown; tubes short, thin-walled, mouths polygonal, becoming concentrically elongate in some species by the splitting of the radial walls: spores ovoid, smooth, pale-ferruginous.

Type species, *Polyporus iodinus* Mont.

1. **Cycloporellus iodinus** (Mont.) Murrill.

Polyporus iodinus Mont. Ann. Sci. Nat. II. 16: 108. 1841.
Cyclomyces iodinus Duss, Enum. Champ. Guad. 33. 1903.
Cyclomycetella pavonia Murrill, Bull. Torrey Club **31**: 423, in part. 1904.

Pileus conchate, thin, umbonate-sessile, simple or imbricate, often radially-plicate, 2–4 × 3–5 × 0.1–0.2 cm.; surface densely concentrically zonate, velvety, tawny-chestnut; margin thin, entire, ferruginous, deflexed in drying: context thin, fibrous, leathery, slightly flexible, fulvous; hymenium fuliginous, tubes 1 mm. or less in length, 3–7 to a mm., isabelline within, polygonal and regular, often becoming concentrically confluent, edges thin, entire, often splitting with age: spores ovoid, smooth, pale-ferruginous, 3 × 5 μ; cystidia dark-brown, rather scanty, averaging 5 × 20 μ.

TYPE LOCALITY: Guiana.
HABITAT: Dead wood of deciduous trees.
DISTRIBUTION: Tropical America.
EXSICCATI: Ellis & Ev. N. Am. Fungi *1705*.

60. **INONOTUS** Karst. Medd. Soc. Faun. Fl. Fenn. **5**: 39. 1879.

Inoderma Karst. Medd. Soc. Faun. Fl. Fenn. 5: 39. 1879. Not *Inoderma* S. F. Gray 1821.
Inodermus Quél. Ench. Fung. 173. 1886.
Phaeoporus Schröt. Krypt. Fl. Schles. **3**: 489. 1888.

Hymenophore annual, epixylous, sessile, dimidiate, simple or somewhat imbricate, variable in size; surface usually anoderm, brown, hairy or glabrous: context brown, thin and fibrous to spongy or corky; hymenium concolorous, usually covered with whitish powder in youth, tubes small, thin-walled: spores smooth, light- to dark-brown.

Type species, *Inonotus cuticularis* (Bull.) Karst.

Sporophore large, 10–30 cm. or more broad.
  Surface conspicuously hirsute. 1. *I. hirsutus.*
  Surface glabrous.
    Spores pale-brown. 2. *I. dryadeus.*
    Spores deep-brown. 3. *I. dryophilus.*
Sporophore minute, only a few millimeters broad, erumpent from lenticels. 4. *I. pusillus.*
Sporophore of medium size, about 5–10 cm. broad.
  Surface conspicuously hairy.
    Pileus very thin, 1–2 mm. 5. *I. pertenuis.*
    Pileus quite thick, 7–20 mm. 6. *I. fulvomelleus.*
  Surface not conspicuously hairy.
    Spores deep-brown in color.
      Context multizonate and iridescent. 7. *I. texanus.*
      Context neither zonate nor iridescent.
        Hymenium fuliginous or black. 8. *I. juniperinus.*
        Hymenium fulvous.
          Surface glabrous; tubes 1 cm. long. 9. *I. jamaicensis.*
          Surface tomentose; tubes 5 mm. long. 10. *I. perplexus.*
    Spores faintly tinted with brown.
      Pores invisible to the unaided eye.
        Pileus thick, azonate, margin obtuse; hymenium dull. 11. *I. corrosus.*
        Pileus thin, zonate, margin very sharp; hymenium glistening. 12. *I. Wilsonii.*
      Pores visible to the unaided eye, although sometimes small.
        Surface soft and spongy; sporophores found on living shrubs, often encircling the twigs.
          Hymenium very concave, margin sharp and depressed. 13. *I. amplectens.*
          Hymenium plane or nearly so, margin rather blunt and not depressed. 14. *I. fruticum.*
        Surface hard and firm; sporophores found on decaying trunks or roots. 15. *I. radiatus.*

1. **Inonotus hirsutus** (Scop.) Murrill, Bull. Torrey Club **31**: 594. 1904.

Boletus hirsutus Scop. Fl. Carn. ed. 2. **2**: 468. 1772.
Boletus spongiosus Lightf. Fl. Scot. 1033. 1777.
Boletus hispidus Bull. Herb. Fr. *pl. 210.* 1784. *pl. 493.* 1791. (Type from France.)
Boletus flavus Pollini, Fl. Ver. **3**: 607. 1824. (Type from Italy.)
Polyporus hispidus Fries, Syst. Myc. 1: 362. 1821.
Polyporus endocrocinus Berk. Lond. Jour. Bot. 6: 320. 1847. (Type from Ohio.)
Inonotus hispidus Karst. Medd. Soc. Faun. Fl. Fenn. 5: 39. 1879.
Inodermus hispidus Quél. Ench. Fung. 172. 1886.

Pileus thick, compact, fleshy to spongy, dimidiate, sometimes imbricate, compressed-ungulate, 7–10 × 10–15 × 3–5 cm.; surface hirsute, ferruginous to fulvous, azonate, smooth; margin obtuse, velvety: context spongy-corky, somewhat fragile when dry, ferruginous to fulvous, blackening with age, 1–1.5 cm. thick; tubes slender, about 1 cm. long, ferruginous within, mouths angular, 2–3 to a mm., ferruginous to bay, blackening with age, edges thin, very fragile, lacerate: spores broadly ovoid, smooth, thick-walled, deep-ferruginous, 2-guttulate, 5–6 × 7–8 μ.

TYPE LOCALITY: Carniola.
HABITAT: Living trunks of various deciduous trees.
DISTRIBUTION: Northern United States; also in Europe.
ILLUSTRATIONS: Bull. Herb. Fr. *loc. cit.*; Sow. Engl. Fungi, *pl. 345.*
EXSICCATI: Roum. Fungi Sel. *2301, 6674, 7345*; Krieger, Fungi Sax. *719*; Thüm. Myc. Univ. *914, 1502*; Allesch. & Schn. Fungi Bavar. *525.*

2. **Inonotus dryadeus** (Fries) Murrill.

Polyporus dryadeus Fries, Syst. Myc. 1: 374. 1821.

Sporophore of immense size, sessile, dimidiate, rarely circular, usually imbricate, applanate or depressed above, convex below, fleshy to spongy-corky, rather fragile when

dry, 15–30 × 25–65 × 3–5 cm.; surface very uneven, azonate, opaque, hoary-isabelline, anoderm to very thinly encrusted, subshining and bay; margin thick, pallid, entire to undulate, weeping: context thick, zonate, subglistening, ferruginous-isabelline to fulvous, 2.5–4 cm. thick; tubes grayish-umbrinous to fulvous within, 5–15 mm. long, slender, very fragile, mouths whitish when young, becoming somewhat resinous in appearance and finally bay-brown, at first minute, circular, becoming angular, 4 to a mm., edges thin, fimbriate to lacerate, deeply splitting and separating with age: spores subglobose, smooth, 8–10 × 7–8 μ, the outer wall hyaline, the inner membrane brown; cystidia 15–35 × 5–9 μ.

TYPE LOCALITY: Sweden.
HABITAT: Trunks of various species of oak.
DISTRIBUTION: Eastern United States west to Kentucky; also in Europe.
ILLUSTRATION: Hussey, Ill. Brit. Fung. 1: *pl. 26.*
EXSICCATI: Roum. Fungi. Gall. *2903;* Thüm. Myc. Univ. *4;* Roum. Fungi Sel. *6536;* Thüm. Fungi Austr. *712.*

3. **Inonotus dryophilus** (Berk.) Murrill, Bull. Torrey Club **31**: 597. 1904.

Polyporus dryophilus Berk. Lond. Jour. Bot. 6: 321. 1847.

Pileus thick, unequal, unguliform, subimbricate, rigid, 7–8 × 10–14 × 2–3 cm.; surface hoary-flavous to ferruginous-fulvous, becoming scabrous and bay with age; margin thick, usually obtuse, sterile, pallid, entire or undulate: context ferruginous to fulvous, zonate, shining, 3–10 mm. thick; tubes slender, concolorous with the context, about 1 cm. long, mouths regular, angular, 2–3 to a mm., glistening, whitish-isabelline to dark-fulvous, edges thin, entire to toothed: spores subglobose, smooth, deep-ferruginous, 6–7 μ; cystidia scanty and short; hyphae deep-ferruginous.

TYPE LOCALITY: Ohio.
HABITAT: Living or dead oak trunks.
DISTRIBUTION: Pennsylvania, Virginia, Ohio, Missouri, and Wisconsin.

4. **Inonotus pusillus** Murrill, Bull. Torrey Club 31: 599. 1904.

Pileus sessile, convex, flabelliform, tapering to a narrow base, erumpent from lenticels, 2 × 2 × 0.5–1 mm.; surface ferruginous to fulvous, silky-striate, subzonate, shining, margin pallid, acute, often depressed: context thin, fibrous, ferruginous; tubes umbrinous, comparatively large, 2–4 to a mm., polygonal, becoming irregular, much exceeding in length the thickness of the context, mouths at first whitish-pulverulent, dissepments thin, entire: spores small, ovoid, 3.5 × 5 μ, pale-ferruginous, copious; hyphae concolorous.

TYPE LOCALITY: Manzanillo, Mexico.
HABITAT: Dead branches of *Jacquinia.*
DISTRIBUTION: Known only from the type locality.

5. **Inonotus pertenuis** Murrill, sp. nov.

Pileus very thin, slightly flexible, fragile, sessile, densely imbricate, decurrent, laterally connate, conchate, 2–3 × 4–6 × 0.1-0.2 cm.; surface striate, hispid-squamulose, anoderm, spuriously zoned, fulvous; margin very thin, lobed, fimbriate, sharply decurved in dried specimens: context fulvous, corky, 1 mm. or less thick; tubes ferruginous to fulvous, 1–1.5 mm. long, mouths circular to angular, minute, 5–6 to a mm., edges thin, entire to lacerate, fragile, ferruginous to dark-fulvous: spores ovoid, smooth, pale-ferruginous, 5 × 4 μ.

Type collected on El Yunque, Cuba, March, 1903, on much-decayed wood, *L. M. Underwood & F. S. Earle 1071.*
DISTRIBUTION: Known only from the type locality.

6. **Inonotus fulvomelleus** Murrill, sp. nov.

Pileus somewhat irregular, dimidiate to subcircular, compressed-ungulate, 3–5 × 5–10 × 1–3 cm.; surface uneven, ferruginous to fulvous, slightly spuriously zonate, roughly hir-

sute or shaggy with dense branched fulvous hairs; margin usually thick, undulate, ochraceous-luteous, hispid: context radiate-fibrous, luteous, shining, 3–7 mm. thick; tubes slender, 3–10 mm. long, dark-melleous within, mouths circular, 4–5 to a mm., regular, covered when young with a bright-yellow powder, edges thick, entire, flavous-melleous to melleous-fulvous: spores ovoid, thin-walled, pale-ferruginous, 6 × 8 μ; hyphae concolorous; spines dark reddish-brown, slender, conical, hooked at the tip, 10 μ thick at the base, 60 μ or less in length.

Type collected on Blue Mountain Peak, Jamaica, 1950–2200 meters, on dead wood, February, 1903, *L. M. Underwood 1522*.

DISTRIBUTION: Jamaica.

7. **Inonotus texanus** Murrill, Bull. Torrey Club **31**: 597. 1904.

Pileus ungulate, attached by the vertex, 3 × 5 × 2–4 cm.; surface hoary-isabelline to fuliginous, finely tomentose, concentrically and radially rimose, especially with age, the separated areas imbricated; margin thick to very obtuse, pallid: context corky, narrowly concentrically zonate, fulvous to umbrinous, iridescent, 1 cm. thick in young specimens, very thin in old ones; tubes 1–3 cm. long, 2–3 to a mm., fulvous to tawny-chestnut, mouths polygonal, pallid to fulvous, darker with age, edges thin, entire: spores ovoid, smooth, very dark-brown, 1–2-guttulate, 8 × 10 μ.

TYPE LOCALITY: Austin, Texas.
HABITAT: Trunks of living mesquite trees.
DISTRIBUTION: Texas.

8. **Inonotus juniperinus** Murrill, sp. nov.

Pileus firm, corky, sessile, narrowly attached, flabelliform, concave above, convex below, 6 × 5 × 1 cm.; surface glabrous, somewhat rugose, subzonate near the margin, fulvous-ferruginous, slightly marked with black; margin very thin, broadly sterile, glabrous, entire to somewhat eroded, fragile, pure-black in dried specimens: context fleshy-tough, fragile when dry, subshining, pale-ferruginous to umbrinous-fulvous, 5–7 mm. thick; tubes short, very fragile, fulvous within, 1–2 mm. long, punctiform near the margin; mouths angular, 4 to a mm., glistening, chestnut-colored to black, edges thin, entire to fimbriate-dentate: spores globose, smooth, dark-brown, 3.5–5 μ; hyphae ferruginous, 3 μ.

Type collected in Texas, on buried roots of cedar, in 1900–1, *W. H. Long Jr. 746*.
DISTRIBUTION: Texas.

9. **Inonotus jamaicensis** Murrill, Bull. Torrey Club **31**: 597. 1904.

Pileus dimidiate to triquetrous, convex, sessile, attached by a broad base, simple or imbricate, 2 × 3 × 1–1.5 cm.; surface encrusted, minutely rugose, cinereous behind, marked toward the margin with dark-brown or black zones; margin regular, often obtuse: context fibrous, fulvous, only a few millimeters thick; tubes 1 cm. long, 4 to a mm., larger by confluence, fulvous, polygonal to irregular, edges thin, entire: spores ovoid, smooth, deep-ferruginous, 1–2-guttulate, very copious, 5 × 7 μ.

TYPE LOCALITY: Mabess River, Jamaica.
HABITAT: Dead branches.
DISTRIBUTION: Known only from the type locality.

10. **Inonotus perplexus** (Peck) Murrill, Bull. Torrey Club **31**: 596. 1904.

Polyporus perplexus Peck, Ann. Rep. N. Y. State Mus. **49**: 19. 1896.

Pileus spongy-fleshy, fibrous, sessile, dimidiate to flabelliform, often narrowly attached-usually imbricate, somewhat laterally connate, 4–6 × 5–10 × 0.5–1 cm.; surface hairy-tomentose to setose-hispid, grayish-tawny to ferruginous, azonate, smooth, anoderm, becoming somewhat glabrous and subzonate with age; margin acute, sterile, pallid, entire: context tawny-ferruginous, subzonate, 2–3 mm. thick; tubes 3–5 mm. long, brownish-ferruginous within, mouths angular to irregular, 3–4 to a mm., edges acute,

fimbriate to lacerate, hoary to dark-fulvous: spores broadly ellipsoid, smooth, deep-ferruginous, 5–7 × 4–5.5; hyphae 2–6 μ.

TYPE LOCALITY: New York.
HABITAT: Dead trunks or decayed spots in living trunks of beech, maple and other deciduous trees.
DISTRIBUTION: Maine to Alabama and west to Missouri.
EXSICCATI: Shear, N. Y. Fungi *110*.

11. **Inonotus corrosus** Murrill, Bull. Torrey Club **31**: 598. 1904.

Pileus conchate, clasping, simple or imbricate, 3 × 5 × 1–4 cm.; surface ferruginous to fulvous, furrowed and much corroded in age; margin entire, obtuse, tomentose, honey-yellow: context thick, spongy, fibrous, ferruginous, perforated by insects soon after maturity; tubes very short, only 1 mm. long each season, 8 to a mm., fulvous, subcylindrical, edges entire, obtuse to acute: spores lenticular, smooth, pale-ferruginous, 4 μ in diameter, 1 μ thick; hyphae deep-ferruginous.

TYPE LOCALITY: Hope Gardens, Jamaica.
HABITAT: Decayed vines and trunks.
DISTRIBUTION: Southern Florida; Bahamas; Cuba; Jamaica.

12. **Inonotus Wilsonii** Murrill, Bull. Torrey Club **31**: 598. 1904.

Pileus dimidiate, applanate, sessile, 2–3 × 4–6 × 0.5 cm.; surface anoderm, velvety-tomentose, fulvous, marked with a few shallow concentric furrows; margin thin, entire, concolorous, sulcate, deflexed in drying: context soft, punky, homogeneous, ferruginous-fulvous, 1–3 mm. thick, separated from the tubes by a very thin black layer; hymenium ferruginous, glistening; tubes 1–2 mm. long, 6–9 to a mm., isabelline within, mouths polygonal, regular, edges thin, entire: spores lenticular, smooth, pale-ferruginous, 3–4 μ in diameter, 1–1.5 μ thick.

TYPE LOCALITY: Honduras.
HABITAT: Decaying logs.
DISTRIBUTION: Known only from the type locality.

13. **Inonotus amplectens** Murrill, Bull. Torrey Club **31**: 600. 1904.

Pileus hemispherical, clasping, concave beneath, 1–3 cm. in diameter, 1–2 cm. thick; surface soft, velvety, dark yellowish-orange; margin at first obtuse, entire, straw-colored, becoming thin, undulate or toothed, deflexed and concolorous: context soft, spongy-fibrous, ferruginous; hymenium at first honey-yellow, becoming umbrinous; tubes 2–4 mm. long, 2–4 to a mm., larger by confluence, umbrinous within, mouths at first closed by a yellowish membrane, subcircular, regular, entire, becoming large, irregular, coarsely toothed and concentrically split into irpiciform plates: spores ellipsoidal, smooth, hyaline, 1-2-guttulate, 4 × 6 μ.

TYPE LOCALITY: Ocmulgee River, Georgia.
HABITAT: Living twigs of *Asimina*.
DISTRIBUTION: Known only from the type locality.

14. **Inonotus fruticum** (Berk. & Curt.) Murrill, Bull. Torrey Club **31**: 601. 1904.

Polyporus fruticum Berk. & Curt. Jour. Linn. Soc. 10: 310. 1868.

Pileus soft, spongy, thin, dimidiate or vertically attached, 1–2.5 cm. broad, 2–5 mm. thick; surface spongy-tomentose, azonate, flavous to fulvous; margin thin and undulate, becoming blackish when bruised: context flavous to ferruginous, spongy, 1–3 mm. thick, with a very thin, firm darker layer next to the tubes; tubes short, ferruginous to fulvous, about 1 mm. long, mouths angular to irregular, 3 to a mm., edges thin, toothed, ferruginous to fuliginous, hoary when young: spores subglobose, smooth, pale-ferruginous, 3–4 μ.

TYPE LOCALITY: Cuba.
HABITAT: Small living branches of orange and oleander.
DISTRIBUTION: Cuba.

15. **Inonotus radiatus** (Sow.) Karst. Rev. Myc. 3[9]: 19. 1881.

Boletus radiatus Sow. Engl. Fungi *pl. 196*. 1799.
Polyporus radiatus Fries, Syst. Myc. 1 . 369. 1821.
Polyporus cucullatus Berk. & Curt. Grevillea 1: 51. 1872. (Type from New England.)
Polyporus glomeratus Peck, Ann. Rep. N. Y. State Mus. 24: 78. 1873. (Type from New York.)
Polyporus aureo-nitens Pat. & Peck; Peck, Ann. Rep. N. Y. State Mus. 42: 25. 1889. (Type from New York.)
Poria setigera Peck, Ann. Rep. N. Y. State Mus. 51: 293. 1898. (Type from New York.)

Pileus corky to woody, imbricate, confluent, sessile, umbonate behind, especially when young, 3–5 × 6–9 × 0.5–1 cm.; surface radiate-rugose to very uneven, minutely velvety to glabrous, fulvous to ferruginous-fuscous or almost black behind; margin thin, pallid, undulate to lobed: context subzonate, ferruginous to dark-fulvous, 1–3 mm. thick; tubes slender, grayish-umbrinous to fulvous, about 5 mm. long, mouths angular, somewhat irregular, 3–5 to a mm., edges whitish at first, becoming dark-fulvous with age, glistening, thin, fimbriate to lacerate: spores ellipsoid, luteolous, 4–6 × 3–4 μ; hyphae 2.5–3 μ.

TYPE LOCALITY: Sussex, England.
HABITAT: Decayed alder, hazelnut, birch, and other deciduous trees.
DISTRIBUTION: Canada and the northeastern United States; also in Europe.
ILLUSTRATION: Sow. Engl. Fungi *loc. cit.*
EXSICCATI: Krieger, Fungi Sax. *422;* Rab.-Wint. Fungi Eur. *509;* Roum. Fungi Sel. *2402;* Sydow, Myc. Mar. *1604*, *4609*, *3424;* Thüm. Myc. Univ. *2110*.

61. **PHAEOLUS** Pat. Tax. Hymén. 86. 1900.

Romellia Murrill, Bull. Torrey Club 31: 338. 1904.

Hymenophore large, irregular, annual, spongy to corky, epixylous; stipe simple, variously attached, wanting at times; surface of pileus anoderm, hispid: context ferruginous; tubes irregular, thin-walled: spores ellipsoidal, smooth, hyaline; cystidia none.

Type species, *Phaeolus Schweinitzii* (Fries) Pat.

1. **Phaeolus sistotremoides** (Alb. & Schw.) Murrill, Bull. Torrey Club 32: 363. 1905.

Boletus sistotremoides Alb. & Schw. Consp. Fung. 243. 1805.
Polyporus Schweinitzii Fries, Syst. Myc. 1: 351. 1821.
Daedalea epigaea Lenz, Schwämme 62. 1831.
Polyporus tabulaeformis Berk. Lond. Jour. Bot. 4: 302. 1845. (Type from Georgia.)
Polyporus spectabilis Fries, Nov. Symb. 48. 1851. (Type from North Carolina.)
Polyporus hispidoides Peck, Ann. Rep. N. Y. State Mus. 33: 21. 1880. (Type from New York.)
Polysticlus Schweinitzii Karst. Rev. Myc. 3[9]: 18. 1881.
Cladomeris Schweinitzii Quél. Ench. Fung. 169. 1886.
? *Polyporus Spongia* Fries, Monogr. Hymen. Suec. 2: 268. 1863. — Fries, Ic. Hymen. *pl. 180, f. 2.* — Lucand, Champ. Fr. *pl. 172.*

Pileus spongy, circular, varying to dimidiate or irregular, 15–20 cm. broad, 0.5–2 cm. thick; surface setose-hispid to strigose-tomentose and scrupose in zones, ochraceous-ferruginous to fulvous-castaneous or darker, quite uneven, somewhat sulcate, obscurely zonate; margin yellow, rather thick, sterile: context very soft and spongy, fragile when dry, sometimes indurate with age, flavous-ferruginous to fulvous, 0.3–0.7 mm. thick; tubes short, 2–5 mm. long, flavous within, mouths large, irregular, averaging 1 mm. in diameter, edges thin, becoming lacerate, ochraceous-olivaceous to fuliginous, rose-tinted when young and fresh, quickly changing to dark-red when bruised: spores ovoid, hyaline, 7–8 × 3–4 μ: stipe central to lateral or obsolete, very irregular, tubercular or very short, resembling the pileus in surface and substance.

TYPE LOCALITY: Europe.
HABITAT: Trunks, stumps and roots of various coniferous trees.
DISTRIBUTION: North America; also in Europe and Asia.
ILLUSTRATION: Fries, Ic. Hymen. *pl. 179, f. 3.*
EXSICCATI: Ellis & Ev. Fungi Columb. *1203;* Thüm. Fungi Austr. *1108;* Roum. Fungi Sel. *6773;* Thüm. Myc. Univ. *2107*.

62. **COLTRICIELLA** Murrill, Bull. Torrey Club **31**: 348. 1904.

Hymenophore small, annual, tough, epixylous; stipe attached to the vertex of the pileus; surface of the pileus anoderm, zonate: context spongy, fibrous, ferruginous; tubes angular, one-layered, dissepiments thin: spores ellipsoidal, smooth, ferruginous.

Type species, *Polyporus dependens* Berk. & Curt.

1. **Coltriciella dependens** (Berk. & Curt.) Murrill, Bull. Torrey Club **31**: 348. 1904.

Polyporus dependens Berk. & Curt. Ann. Nat. Hist. II. **12**: 431. 1853.—Grevillea 1: 37. 1872.
Polystictus dependens Sacc. Syll. Fung. **6**: 213. 1888.

Hymenophore gregarious or cespitose; pileus very small, conical, pendant, vertically attached, 1–2 cm. broad, about 1 cm. thick; surface cinnamon-colored, soft, elongate-striate, sericeous, subzonate; margin acute, fibrillose: context spongy, very thin, ferruginous-fulvous, 1–2 mm. thick; tubes long, 5–8 mm., fulvous, mouths large, angular, 1-2 to a mm., smaller near the margin, edges thin, toothed, yellowish to fulvous: spores ellipsoidal, smooth, ferruginous, 7–8 × 3.5–4 μ: stipe central, attached at the vertex, cylindrical, gradually enlarging as it approaches the pileus, about 1 cm. long, 1–3 mm. thick, resembling the pileus in surface and substance.

TYPE LOCALITY: South Carolina.
HABITAT: Decorticated pine wood.
DISTRIBUTION: New Jersey, North Carolina, and South Carolina.

63. **COLTRICIA** (Micheli) S. F. Gray, Nat. Arr. Brit. Pl. **1**: 644. 1821.

Strilia S. F. Gray, Nat. Arr. Brit. Pl. **1**: 645. 1821.
Pelloporus Quél. Ench. Fung. 166. 1886.
Mucronoporus Ellis & Ev. Jour. Myc. **5**: 28. *pl. 8*. 1889.
Onnia Karst. Finl. Basidsv. 326. 1889.
Xanthochrous Pat. Cat. Tun. 51. 1897.

Hymenophore annual, terrestrial or humus-loving, simple, small to medium, usually circular and central-stemmed; surface anoderm, brown, zonate or azonate: context yellowish or brown, coriaceous to spongy; hymenium concolorous, covered with yellowish or whitish powder when young; tubes thin-walled, at length fimbriate: spores smooth, rounded, yellowish-brown; cystidia rarely present.

Type species, *Coltricia connata* S. F. Gray.

Pileus concentrically zonate; context very thin.
  Pileus regularly circular in outline.
    Pileus shining-cinnamon, strigose, striate, thin, flexible, slightly depressed, the margin often fimbriate or pseudo-ciliate. 1. *C. cinnamomea.*
    Pileus dull rusty-cinnamon to hoary, velvety to glabrous, deeply depressed, the margin thicker and less fimbriate.
      Tubes small, 0.5 mm. or less in diameter. 2. *C. perennis.*
      Tubes large, 1 mm. in diameter. 3. *C. focicola.*
  Pileus irregular and variable in outline, dimidiate, reniform or spatulate, or separated into several lobes; confined to the tropics. 4. *C. spathulata.*
Pileus usually azonate; context rather thick and spongy.
  Context duplex, soft above and woody below; hymenium beset with spines. 5. *C. tomentosa.*
  Context homogeneous; hymenium free from spines.
    Pileus ferruginous to fulvous, 5 cm. in diameter; surface finely tomentose; stipe swollen and soft at the base. 6. *C. obesa.*
    Pileus darker, fulvous to chocolate-colored, 10 cm. in diameter; surface rough and shaggy; stipe scutate and firm at the base. 7. *C. Memmingeri.*

1. **Coltricia cinnamomea** (Jacq.) Murrill, Bull. Torrey Club **31**: 343. 1904.

Boletus cinnamomeus Jacq. Coll. **1**: 116. 1786.
Strilia cinnamomea S. F. Gray, Nat. Arr. Brit. Pl. 1: 645. 1821.
Polyporus parvulus Klotzsch, Linnaea **8**: 483. 1833. (Type from boreal North America.) Not *P. parvulus* Schw. 1832.
Polyporus obleclans Berk. Lond. Jour. Bot. 4: 51. 1845. .(Type from Australia.)

Polyporus splendens Peck, Ann. Rep. N. Y. State Mus. **26**: 68. 1874. (Type from New York.)
Polystictus cinnamomeus Sacc. Michelia 1: 362. 1878.
Polyporus subsericeus Peck, Ann. Rep. N. Y. State Mus. **33**: 37. 1880. (Type from New York.)

Pileus coriaceous, thin, circular, umbilicate, sometimes deeply so, 1–4 cm. in diameter, 1–2 mm. thick; surface bright-cinnamon, cinereous, shining, strigose-striate, zonate; margin undulate to slightly lobed, fimbriate, concolorous: context membranous, concolorous, less than a mm. thick; tubes pale-umbrinous within, 1–2 mm. long, slightly decurrent, mouths rather large, angular, ferruginous to fulvous, 2–3 to a mm., edges thin, fimbriate-dentate, collapsing with age: spores ellipsoid, pale yellowish-brown, smooth, 6–8 × 4–6 μ; hyphae 3–8 μ: stipe central, velvety, reddish-fuscous, nearly equal, 2–4 cm. long, 3–5 mm. thick.

TYPE LOCALITY: Austria.
HABITAT: Mossy soil or decayed wood almost reduced to humus.
DISTRIBUTION: Cosmopolitan.
ILLUSTRATIONS: Jacq. Coll. *pl. 2;* Atk. Stud. Am. Fungi *f. 182.*
EXSICCATI: Ellis & Ev. N. Am. Fungi *1101.*

2. **Coltricia perennis** (L.) Murrill, Jour. Myc. **9**: 91. 1903.

Boletus perennis L. Sp. Pl. 1177. 1753.
Boletus coriaceus Scop. Fl. Carn. ed. 2. **2**: 465. 1772.
Boletus subtomentosus Bolt. Hist. Fung. **2**: 87. *pl. 87.* 1788.
Boletus confluens Schum. Enum. Pl. Saell. **2**: 378. 1803.
Polyporus perennis Fries, Syst. Myc. **1**: 350. 1821.
Coltricia connata S. F. Gray, Nat. Arr. Brit. Pl. **1**: 644. 1821.
Polystictus perennis Karst. Rev. Myc. **3**[9]: 18. 1881.
Pelloporus perennis Quél. Ench. Fung. 166. 1886.

Pileus coriaceous, circular, infundibuliform, 3–6 cm. broad, 1.5–3 mm. thick; surface zonate, short-tomentose, substriate, ferruginous to cinereous, the zones sometimes glabrous and chestnut-colored; margin very thin, entire to lacerate, inflexed when dry: context very thin, concolorous, scarcely a mm. thick; tubes short, grayish-umbrinous within, 1–3 mm. long, mouths small, angular, 2–4 to a mm., whitish when young, becoming fulvous, edges thin, dentate to lacerate, soon collapsing: spores ovoid, smooth, pale yellowish-brown, 4–6 × 2–3.5 μ: stipe bulbous and often united with that of neighboring plants at the base, tapering upward, velvety, ferruginous to fulvous, solid, corky, 3–5 cm. long, 2–5 mm. thick.

TYPE LOCALITY: Sweden.
HABITAT: Dry exposed soil in woods, especially where fires have been kindled.
DISTRIBUTION: Temperate regions of the northern hemisphere; south in the United States to Virginia.
ILLUSTRATIONS: Sow. Engl. Fungi *pl. 192;* Bull. Herb. Fr. *pl. 28.*
EXSICCATI: Ellis & Ev. Fungi Columb. *602;* Ellis & Ev. N. Am. Fungi *1701;* Karst. Finl. Fungi *113;* Shear, N. Y. Fungi *29;* Thüm. Myc. Univ. *2108;* Krieger, Fungi Sax. *224;* Sydow, Myc. Mar. *211;* Rab. Fungi Eur. *2203;* Romell, Fungi Scand. *114;* Linhart, Fungi Hung. *448.*

3. **Coltricia focicola** (Berk. & Curt.) Murrill.

Polyporus connatus Schw. Trans. Am. Phil. Soc. II. **4**: 154. 1832. Not *Coltricia connata* S. F. Gray, 1821.
Polyporus focicola Berk. & Curt. Jour. Linn. Soc. **10**: 305. 1868.
Coltricia parvula Murrill, Bull. Torrey Club **31**: 345, in part. 1904. Not *Polyporus parvulus* Kotzsch.

Pileus membranaceous, circular, umbilicate, 3–6 cm. in diameter, 0.5–1 cm. thick; surface velvety, cinnamon to cinereous, multizonate; margin thin, entire or undulate: context very thin, ferruginous to fulvous, scarcely 1 mm. in thickness; tubes long, ample, ferruginous to fulvous within, 5–8 mm. long, mouths 1–2 mm. in diameter, angular, fulvous, edges thin, toothed, becoming lacerate and collapsed with age, causing the pores to appear much smaller than they really are: spores oblong-ellipsoid, smooth, pale yellowish-brown, abundant, 1-guttulate, 6 × 3.5 μ: stipe central, cylindrical, slightly enlarged at the base, velvety, ferruginous to fulvous, solid, corky, 2–3 cm. long, 3–5 mm. thick.

TYPE LOCALITY: North Carolina.
HABITAT: Burnt soil in woods.
DISTRIBUTION: Connecticut to Alabama.
EXSICCATI: Rav. Fungi Car. 1: *8;* Ellis, N. Am. Fungi *305.*

4. **Coltricia spathulata** (Hook.) Murrill.

Boletus spathulatus Hook. in Kunth, Syn. Pl. 1: (9). 1822.
Polyporus multiformis Mont. Ann. Sci. Nat. IV. 1: 125. 1854. (Type from Guiana.)

Pileus small, coriaceous, multiform, varying from dimidiate to reniform or spatulate, or separated into several distinct lobes, 0.5–1.5 × 1–2.5 × 0.1–0.2 cm.; surface narrowly zonate, silky, rarely depressed, flavous to ferruginous-fulvous with fulvous or chestnut-colored zones; margin flavous, very thin, undulate to lobed: context membranous, very thin, flavous, with a black line near the surface, scarcely a mm. thick; tubes very short, exceedingly minute, not decurrent, less than 1 mm. long, mouths angular, stuffed when young, flavous to umbrinous, about 10 to a mm., edges thin, subentire: spores smooth, yellowish-brown: stipe lateral, excentric or erect, irregular, often branched, velvety, solid, tough, ferruginous to fulvous, 2–5 cm. long, 2–4 mm. thick.

TYPE LOCALITY: Near Lochsa, Peru.
HABITAT: On the ground or on dead wood in woods.
DISTRIBUTION: Mexico; Honduras; Bahamas; also in Peru, Guiana, and Brazil.
EXSICCATI: Ule, Myc. Bras. *45*.

5. **Coltricia tomentosa** (Fries) Murrill, Bull. Torrey Club **31**: 346. 1904.

Polyporus tomentosus Fries, Syst. Myc. 1: 351. 1821.
Polyporus triqueter Fries, Epicr. Myc. 474. 1838. (Type from Sweden.)
Polyporus circinatus Fries, Monogr. Hymen. Suec. **2**: 268. 1863. (Type from Sweden.)
Polyporus dualis Peck, Ann. Rep. N. Y. State Mus. **30**: 44. 1878. (Type from New York.)
Pelloporus tomentosus Quél. Ench. Fung. 166. 1886.
Mucronoporus tomentosus Ellis & Ev. Jour. Myc. **5**: 28. 1889.
Onnia tomentosa Karst, Finl. Basidsv. 326. 1889.
Xanthochrous tomentosus Pat. Cat. Tun. 52. 1897.

Pileus circular, varying to dimidiate, sometimes cespitose, 6–12 cm. in diameter, 3–5 mm. thick; surface ferruginous-fulvous, azonate, rarely subzonate, tomentose, plane or depressed at the center; margin lighter in color, sterile, acute, entire to lobed: context duplex, soft-corky, concolorous and spongy above, corky-woody, fibrous and flavous-ferruginous below, 2–4 mm. thick; tubes sometimes decurrent, about 1 mm. long, avellaneous within, mouths small, equal, angular, 3–5 to a mm., covered at first with a whitish substance, edges white, entire, becoming grayish-umbrinous, very thin and toothed with age: spores ellipsoid, smooth, thin-walled, pale yellowish-brown, 5–7 × 2–4 μ; spines abundant, more or less curved, ovate-lanceolate at first, becoming more slender, fulvous-brown, 50–75 × 6–15 μ; hyphae stramineous-fulvous, 2.5–5 μ: stipe central to lateral or wanting, unequal, obese, fulvous, tomentose, resembling the context within, 0–5 cm. long, 5–15 mm. thick.

TYPE LOCALITY: Sweden.
HABITAT: Under coniferous trees, usually attached to coniferous wood.
DISTRIBUTION: North America; also in Europe.
ILLUSTRATIONS: Jour. Myc. **5**: *pl. 8*; Fries, Ic. Hymen. *pl. 180, 187*.
EXSICCATI: Allesch. & Schn. Fungi Bavar. *51*.

6. **Coltricia obesa** (Ellis & Ev.) Murrill, Bull. Torrey Club **31**: 346. 1904.

Polystictus obesus Ellis & Ev. Bull. Torrey Club **24**: 125. 1897.

Hymenophore simple or cespitose, sometimes connate; pileus circular, convex to depressed, 4–6 cm. broad, 5–10 mm. thick; surface fulvous, tomentose, azonate, smooth or pelliculose; margin yellowish-cinnamon, obtuse, becoming acute, entire or undulate: context homogeneous, soft, friable, fulvous, 4–8 mm. thick; tubes short, about 1 mm. in length, pale-avellaneous within, mouths irregular, circular to radially-elongate and slightly sinuous, 0.5–1 mm. broad, edges becoming acute and slightly toothed, white to fulvous: spores ellipsoid, smooth, ferruginous, 7–8 × 4–5 μ; cystidia none: stipe central, spongy, tomentose, fulvous, 4–6 cm. long, 5–15 mm. thick above, enlarged below, 1–3 cm. in thickness.

TYPE LOCALITY: Newfield, New Jersey.
HABITAT: Attached to buried pine branches.
DISTRIBUTION: Canada to North Carolina and west to Ohio.

7. **Coltricia Memmingeri** Murrill, Bull. Torrey Club 31: 347. 1904.

A large dark-brown plant, with rough shaggy surface and short thick stipe, much dilated at the base. Pileus very irregular, circular to dimidiate, convex to plane or depressed, 10 × 1 cm.; surface fulvous to dark seal-brown, ornamented with long imbricated scales of the same color; margin alutaceous, pubescent, sterile, subacute, undulate: context corky, fragile, azonate, 0.5–1 cm. thick, thinner towards the margin, concolorous; tubes adnate, 1–4 mm. long, 1–3 to a mm., umbrinous, apparently blackening with age, mouths circular and whitish when young, becoming angular, irregular and concolorous or darker with age, edges entire to dentate: spores ovoid, smooth, light-ferruginous, usually 2-guttulate, 4 × 7 μ; hyphae golden-yellow; cystidia none: stipe central or excentric, at times confluent, very short, thick, angular or flattened, dilated at the base to twice its thickness above, resembling the pileus in color, surface and substance, 1–3 × 3–5 cm.

TYPE LOCALITY: Flat Rock, North Carolina.
HABITAT: Wet clay banks.
DISTRIBUTION: Known only from the type locality.

DOUBTFUL SPECIES

Polyporus simillimus Peck, Ann. Rep. N. Y. State Mus. 32: 34. 1879. Described from Brewerton, New York, on burnt soil where *C. focicola* grew; which species it very closely resembles in every respect except that its tubes are much smaller. Additional field studies should determine whether or not it is distinct.

64. **CRYPTOPORUS** (Peck) Shear, Bull. Torrey Club 29: 450. 1902.

Polyporus § *Cryptoporus* Peck, Bull. Torrey Club 7: 104. 1880.

Hymenophore subglobose, sessile, epixylous; surface smooth, encrusted: context white, corky; tubes white, concealed at first by a volva, which breaks at one or more points at maturity; mouths constricted, discolored: spores smooth, hyaline.

Type species, *Polyporus volvatus* Peck.

1. **Cryptoporus volvatus** (Peck) Shear, Bull. Torrey Club 29: 450. 1902.

Polyporus volvatus Peck, Ann. Rep. N. Y. State Mus. 27: 98. 1877.
Polyporus obvolutus Berk. & Cooke, Grevillea 7: 1. 1878. (Type from California.)
Polyporus inflatus Ellis & Martindale, Am. Nat. 18: 722. 1884. (Type from Oregon.)
Polyporus volvatus Helix P. Henn. Hedwigia 37: 273. 1898. (Type from California.)

Pileus simple, sessile, rarely spuriously stipitate, globose to ungulate, 2–6 cm. broad, 1.5–3 cm. thick; surface white, sometimes slightly reddish-brown, smooth, slightly viscid or resinous when young, glabrous, marked with anastomosing depressed lines in larger specimens; margin very rounded, concolorous, smooth, produced into a volva covering the tubes, at length rupturing at 1–3 points forming small rounded or irregular apertures: context soft-corky, homogeneous, white, 2–5 mm. thick; tubes 1–1.5 mm. long, isabelline to umbrinous, mouths angular, yellow with a tinge of cinnamon, 3 to a mm., edges thick, becoming thin, entire: spores oblong, smooth, hyaline or pale flesh-colored, 11–13 × 4–5 μ.

TYPE LOCALITY: New York, on *Abies nigra*.
HABITAT: On dead coniferous wood.
DISTRIBUTION: Canada to Virginia and west to British Columbia and California; also in Japan.
ILLUSTRATION: Peck, *loc. cit. pl. 2, f. 3–6.*
EXSICCATI: Ellis, N. Am. Fungi *307*.

65. **FOMES** Gill. Champ. Fr. 1: 682. 1878.

Fomitopsis Karst. Rev. Myc. 3[9]: 18. 1881.
Heterobasidion Bref. Unters. Gesammt. Myk. 8: 154. 1889. Not *Heterobasidium* Massee 1888.

Hymenophore sessile, ungulate or applanate, epixylous; surface anoderm or encrusted, sulcate, rarely zonate: context white, wood-colored, or flesh-colored, corky or

woody, rarely punky; tubes cylindrical, usually thick-walled, stratose: spores smooth, hyaline or subhyaline.

Type species, *Polyporus marginatus* Fries.

Context flesh-colored; light-brown in faded specimens.
  Tubes 1–2 mm. long each season; spores ellipsoid. 1. *F. roseus.*
  Tubes 3–5 mm. long each season; spores globose.
    Species confined to tropical regions. 2. *F. Sagraeanus.*
    Species confined to temperate regions. 3. *F. fraxineus.*
Context white or nearly so.
  Pileus less than 3 cm. broad.
    Pileus ungulate, becoming black only at the base, zonate and concentrically sulcate in age; tubes over 2 mm. long. 4. *F. ohiensis.*
    Pileus scutellate, uniformly black even when young; tubes less than 2 mm. long, context thinner than tube-layer. 5. *F. scutellatus.*
  Pileus more than 3 cm. broad.
    Pileus encrusted, surface darker than the context.
      Surface pure-black or nearly so at maturity, with no trace of red; species tropical.
        Context punky; crust thin and fading with age. 6. *F. subferreus.*
        Context woody; crust thick, horny and shining with age. 7. *F. ligneus.*
      Surface gray, brown or reddish, rarely becoming black with age; species found in temperate regions.
        Pileus thin, distinctly zonate, irregular or applanate; crust brown to black. 8. *F. annosus.*
        Pileus thick, sulcate, ungulate, rarely applanate.
          Surface soon becoming rimose, deeply sulcate; older pores visible in the upper projecting annual layers; pileus exactly ungulate; found only on *Shepherdia.* 9. *F. Ellisianus.*
          Surface not as above.
            Mouths of tubes 4–5 to a mm.; surface often resinous, bay or black in color; abundant on conifers. 10. *F. ungulatus.*
            Mouths of tubes 2–3 to a mm.; surface gray to black, never resinous nor reddish; found only on ash and a few other deciduous trees. 11. *F. fraxinophilus.*
    Pileus rarely encrusted, surface concolorous with the context.
      Pileus chalk-white or slightly yellowish throughout, cylindrical, context friable, bitter; growing on conifers. 12. *F. Laricis.*
      Pileus not as above.
        Pores large, 2 to a mm., becoming reddish when bruised, annual strata separated by thick layers of context; tropical. 13. *F. rubritinctus.*
        Pores small, 5–7 to a mm., not changing to reddish when bruised.
          Tubes white, concolorous, the mouths glistening. 14. *F. populinus.*
          Tubes smoky at maturity, darker than the context, not over 3 mm. long. 15. *F. Meliae.*
          Tubes light-brown, strongly contrasted with the white or yellowish context, and a cm. or more in length.
            Surface zonate. 16. *F. Auberianus.*
            Surface azonate. 17. *F. geotropus.*

1. **Fomes roseus** (Alb. & Schw.) Cooke, Grevillea **14**: 21. 1885.

Boletus roseus Alb. & Schw. Consp. Fung. 251. 1805.
Polyporus roseus Fries, Syst. Myc. **1**: 372. 1821.
Polyporus carneus Nees, Nova Acta Acad. Leop.-Carol. **13**: *pl. 3.* 1827.
Polyporus rufo-pallidus Trog, Flora **15**: 556. 1832.
Fomitopsis rosea Karst. Rev. Myc. **3**[9]: 18. 1881.
Fomes carneus Cooke, Grevillea **14**: 21. 1885.

Pileus woody, dimidiate, varying from conchate to ungulate, often imbricate and longitudinally effused, 2–4 × 6–8 × 0.5–3 cm.; surface rugose, subfasciate, slightly sulcate, rosy or flesh-colored, becoming gray or black with age; margin acute, becoming obtuse, sterile, pallid, often undulate: context floccose-fibrose to corky, rose-colored, 0.2–2 cm. thick; tubes indistinctly stratose, 1–2 mm. long each season, mouths circular, 3–4 to a mm., edges obtuse, concolorous: spores ellipsoid, smooth, thick-walled, subhyaline, 3.5 × 6 μ.

TYPE LOCALITY: Germany.
HABITAT: Dead trunks; especially those of coniferous trees.
DISTRIBUTION: North America; also in Europe.
ILLUSTRATIONS: Nees, *loc. cit.;* Fries, Ic. Hymen. *pl. 186, f. 1.*
EXSICCATI: Ellis, N. Am. Fungi *916;* Rav. Fungi Car. *14;* Thüm. Myc. Univ. *1904;* Griff. West Am. Fungi *351.*

2. **Fomes Sagraeanus** (Mont.) Murrill.

Polyporus Sagraeanus Mont. Pl. Cell. Cuba 409. 1842.

Pileus corky to woody, dimidiate, sessile, conchate or applanate, often irregular, 4–6 × 5–10 × 0.5–2 cm.; surface anoderm, velvety, azonate, avellaneous, subsulcate, becoming glabrous, brown or black, and horny-encrusted with age; margin thin, concolorous: context corky, flesh-colored or light-brown, 1–3 mm. thick; tubes indistinctly stratified, pale rose-colored, 3–5 mm. long each season, often found in one layer only, mouths circular, 5 to a mm., edges obtuse, entire, roseous, becoming discolored with age: spores globose, smooth, subhyaline or slightly smoky, 6 μ; hyphae 6–8 μ.

TYPE LOCALITY: Cuba.
HABITAT: Dead logs and stumps.
DISTRIBUTION: Southern Florida; Bermuda; Cuba; also in Colombia.
ILLUSTRATION: Mont. Pl. Cell. Cuba *pl. 16, f. 4.*

3. **Fomes fraxineus** (Bull.) Cooke, Grevillea **14**: 21. 1885.

Boletus fraxineus Bull. Herb. Fr. **10**: *pl. 433. f. 2.* 1789.
Polyporus fraxineus Fries, Syst. Myc. 1: 374. 1821.
Placodes incanus Quél. Ench. Fung. 172. 1886.

Pileus corky to woody, dimidiate, applanate, usually imbricate, often laterally confluent, thinner in American forms, 4–10 × 6–15 × 1–6 cm.; surface velvety to glabrous, zonate at times, concentrically sulcate with age, at first white owing to a covering of fine waxy hairs, becoming bay and finally nearly black with age; margin thin or tumid, sterile, cream-colored, pulverulent with reddish blotches, becoming dark and hygrophanous when bruised: context punky, becoming corky, isabelline, tinged with carneous when fresh, 0.5–5 cm. thick; tubes indistinctly stratified, 0.5–1 cm. long each season, isabelline when old, reddish flesh-colored in the younger layers, mouths subcircular, 4 to a mm., edges obtuse, entire, light flesh-colored, covered at first with a white waxy coat, quickly changing to a darker color when bruised: spores subglobose, smooth, subhyaline, 5–6 × 6–7 μ.

TYPE LOCALITY: France.
HABITAT: Trunks and stumps of sweet gum, ash, peach, and other deciduous trees.
DISTRIBUTION: New York, Ohio, Illinois, and Louisiana; also in Europe.
ILLUSTRATION: Bull. Herb. Fr. *loc. cit.*
EXSICCATI: Thüm. Myc. Univ. *806;* Arcang. Erb. Crit. Ital. II. *1452.*

4. **Fomes ohiensis** (Berk.) Murrill, Bull. Torrey Club **30**: 230. 1903.

Trametes ohiensis Berk. Grevillea 1: 66. 1872.

Pileus woody, ungulate, narrow and sometimes decurrent behind, often laterally connate, 0.5–1.5 × 1–2 × 0.3–1 cm.; surface minutely velvety to glabrous, zonate, light-brown, becoming black at the base, and concentrically sulcate with age; margin obtuse, pallid, often undulate: context corky, pallid, indistinctly zonate, 2–5 mm. thick; tubes distinctly stratified, 3–6 mm. long each season, nearly white within, mouths circular, 3 to a mm., edges obtuse, chalky-white, becoming cremeous: spores globose, smooth, hyaline, 5 μ; conidia ovoid, smooth, hyaline, 7–8 × 12–13 μ; hyphae hyaline, 2–4 μ; cystidia none.

TYPE LOCALITY: Ohio.
HABITAT: Dead branches and structural timber of deciduous trees.
DISTRIBUTION: Eastern Canada to Michigan and south as far as Ohio.
EXSICCATI: Ellis, N. Am. Fungi *923.*

5. **Fomes scutellatus** (Schw.) Cooke, Grevillea **14**: 19. 1885.

Polyporus scutellatus Schw. Trans. Am. Phil. Soc. II. 4: 157. 1832.

Pileus woody, dimidiate or scutellate, concave below, 0.5–0.7 × 1–1.5 × 0.3–0.5 cm.; surface rugose, tuberculose, zonate, fuscous-black; margin acute, deflexed, pallid to light-brown: context woody, indistinctly zonate, isabelline, 2–3 mm. thick; tubes indistinctly stratified, 1–1.5 mm. long each season, isabelline within, mouths subcircular to rhomboidal,

4 to a mm., edges rather thin, obtuse, entire, chalk-white, becoming avellaneous: spores smooth, hyaline.

TYPE LOCALITY: Pennsylvania, on dead *Syringa*.
HABITAT: Dead branches and timber of alder, witch hazel, sweet gum and other deciduous shrubs and trees.
DISTRIBUTION: Canada to Florida and west to Ohio.
EXSICCATI: Ellis & Ev. N. Am. Fungi *1597*.

6. **Fomes subferreus** Murrill, sp. nov.

Pileus corky to woody, conchate or applanate, imbricate, usually longitudinally effused, 3–9 × 5–15 × 1–2 cm.; surface velvety, rugose-striate, slightly sulcate, black, with traces of purple, becoming glabrous and gray with age; margin subobtuse, pallid, marked with purplish-black blotches: context punky, isabelline, 0.5–1 cm. thick; tubes unevenly stratified, 2–3 mm. long each season, glistening white, discolored in the older layers, mouths circular, 5 to a mm., edges obtuse, glistening, milk-white to avellaneous or isabelline: spores globose, smooth, hyaline, 3 μ; hyphae hyaline, 4 μ; cystidia none.

Type collected at Herradura, Cuba, March 7, 1905, on a decayed deciduous log in low woods, *F. S. Earle & W. A. Murrill 148.*
DISTRIBUTION: Cuba; Honduras; Costa Rica.

7. **Fomes ligneus** (Berk.) Cooke, Grevillea **13**: 119. 1884.

Polyporus ligneus Berk. Ann. Nat. Hist. **3**: 387. 1839.
? *Fomes hornodermus* Mont. Ann. Sci. Nat. IV. **5**: 368. 1856. (Type from Brazil.)
Fomes sulcatus Cooke, Grevillea **12**: 32. 1883. (Type from Demerara, British Guiana.)

Pileus very hard, applanate or ungulate, 5–10 × 13–15 × 4–8 cm.; surface smooth, sulcate, dark-brown or black, becoming horny-encrusted and shining with age; margin obtuse, pallid: context hard and woody, white to pale-umbrinous, 0.5–1 cm. thick, extremely scanty in old specimens; tubes evenly stratified, 3–5 mm. long each season, white, mouths minute, circular, 3–4 to a mm., edges obtuse, white or slightly avellaneous: spores subglobose or ovoid, smooth, hyaline, 6 × 7 μ; hyphae 6 μ; cystidia none.

TYPE LOCALITY: The island of St. Vincent.
HABITAT: Dead wood.
DISTRIBUTION: Nicaragua; Costa Rica; St. Kitts; St. Vincent; Grenada; also in South America.

8. **Fomes annosus** (Fries) Cooke, Grevillea **14**: 20. 1885.

Polyporus annosus Fries, Syst. Myc. 1: 373. 1821.
Polyporus serpentarius Pers. Myc. Eur. **2**: 82. 1825.
Polyporus subpileatus Weinm. Fl. Ross. 332. 1836.
Polyporus resinosus Rostk.; Sturm, Deuts. Fl. **4**: 61. 1838.
Trametes radiciperda R. Hartig, Wicht. Krankh. Waldb. 62. 1874.
Fomitopsis annosa Karst. Rev. Myc. **39**: 18. 1881.
Polyporus Gillotii Roum.; Gillot, Rev. Myc. **4**: 234. *pl. 32*. 1882.
Heterobasidion annosum Bref. Unters. Gesammt. Myk. **8**: 154. 1889.
Polyporus irregularis Underw. Bull. Torrey Club **24**: 85. 1897. (Type from Auburn, Alabama.)

Pileus woody, dimidiate, very irregular, conchate to applanate, 10–13 × 5–8 × 0.5–2 cm.; surface at first velvety, rugose, anoderm, light-brown, becoming thinly encrusted, zonate, and finally black with age; margin pallid, acute, becoming thicker: context soft-corky to woody, white, 0.3–0.5 cm. thick; tubes unevenly stratified, 2–8 mm. long each season, white, mouths subcircular to irregular, 3–4 to a mm., edges rather thin, entire, firm, white, unchanging: spores subglobose or ellipsoid, smooth, hyaline, 5–6 × 4–5 μ.

TYPE LOCALITY: Sweden.
HABITAT: Roots, lower parts of trunks, and stumps of various coniferous trees.
DISTRIBUTION: North America; also in Europe.
ILLUSTRATIONS: Fries, Ic. Hymen. *pl. 186. f. 2;* Sturm, Deuts. Fl. *pl. 29;* Bref. Unters. Gesammt. Myk. *pl. 9*.
EXSICCATI: Roum. Fungi Gall. *2207, 3111;* Roum. Fungi Sel. *302, 7248;* Cavara, Funghi Paras. *324;* Allesch. & Schn. Fungi Bavar. *137, 432;* Kunze, Fungi Sel. *1;* Krieger, Fungi Sax. *121;* Romell, Fungi Scand. *13;* Sydow, Myc. Mar. *403, 504, 1108, 3107;* Rab. Fungi Eur. *405;* Thüm. Myc. Univ. *106*.

9. **Fomes Ellisianus** F. W. Anderson, Bot. Gaz. **16**: 113. 1891.

Polyporus circumstans Morgan, Jour. Cinc. Soc. Nat. Hist. 18: 37. 1895. (Type from South Dakota.)

Pileus dimidiate, ungulate, woody, 4–7 × 6–8 × 2–5 cm.; surface radiate-rugose, sulcate, light-bay or brown, becoming rimose and darker with age; margin obtuse or rounded, pallid, fertile: context corky, pale-ochraceous, scanty, 0.5–1 cm. thick, becoming scanty in the older sporophores; tubes indistinctly stratified, concolorous with the context, fragile, 0.5–1.5 cm. long each season, mouths subcircular, 3 to a mm., edges rather thick, pruinose when young, becoming concolorous: spores ovoid to slightly oblong, smooth, hyaline, 4–5 × 5–6 μ; hyphae 5 μ, very light-brown; cystidia none.

TYPE LOCALITY: Teton Valley, Montana.
HABITAT: Living trunks and branches of *Shepherdia argentea* Nutt.
DISTRIBUTION: Montana, South Dakota, Colorado, and New Mexico.
ILLUSTRATIONS: Bot. Gaz. **16**: *pl. 12*: Jour. Cinc. Soc. Nat. Hist. **18**: *pl. 1, f. 4.*
EXSICCATI: F. W. Anderson, Paras. Fung. Mont. *537.*

10. **Fomes ungulatus** (Schaeff.) Sacc. Syll. Fung. **6**: 167. 1888.

Boletus igniarius Scop. Fl. Carn. ed. 2. **2**: 469. 1772. Not *B. igniarius* L. 1753.
Boletus ungulatus Schaeff. Fung. Bavar. **4**: 88. *pl. 137, 138.* 1774.
Boletus fulvus Schaeff. Fung. Bavar. **4**: 89. *pl. 262.* 1774.
Boletus semiovatus Schaeff. Fung. Bavar. 4: 92. *pl. 270.* 1774.
Boletus marginatus Pers. Obs. Myc. **2**: 6. 1799.
Boletus pinicola Sw. Sv. Vet.-Akad. Handl. **1810**: 88. 1810.
Polyporus marginatus Fries, Syst. Myc. 1: 372. 1821.
Polyporus pinicola Fries, Syst. Myc. **1**: 372. 1821.
Fomes marginatus Gill. Champ. Fr. **1**: 683. 1878.
Fomitopsis pinicola Karst. Rev. Myc. **3**[9]: 18. 1881.
Fomes pinicola Cooke, Greyillea **14**: 17. 1885.
Fomes ponderosus Schrenk, Bull. U. S. Dep. Agr. Pl. Ind. **36**: 30. 1903. (Type from Dakota, on *Pinus ponderosa.*)

Pileus corky to woody, ungulate, 8–15 × 12–40 × 6–10 cm.; surface glabrous, sulcate, reddish-brown to gray or black, often resinous; margin at first acute to tumid, pallid, becoming yellowish or reddish-chestnut: context woody, pallid, 0.5–1 cm. thick; tubes distinctly stratified, 3–5 mm. long each season, white to isabelline, mouths circular, 3–5 to a mm., edges obtuse, white to cream-colored: spores ovoid, smooth, hyaline, 6 μ; hyphae 8 μ; cystidia none.

TYPE LOCALITY: Bavaria.
HABITAT: Abundant on coniferous trees, such as hemlock and pine, and found more rarely on deciduous trees, such as beech, elm, maple, and birch, standing near its usual hosts.
DISTRIBUTION: Temperate regions.
ILLUSTRATIONS: Schaeff. Fung. Bav. *l. c.;* Bull. U. S. Dep. Agr. Pl. Ind. **36**: *pl. 10–14.*
EXSICCATI: Rab.-Wint. Fungi Eur. *3301;* Thüm. Fungi Austr. *814, 817, 1106;* Ellis & Ev. N. Am. Fungi *1692;* Thüm. Myc. Univ. *1906;* Roum. Fungi Gall. *1808, 2205;* Linhart, Fungi Hung. *250, 446;* Romell, Fungi Scand. *116;* Allesch. & Schn. Fungi Bavar. *138;* D. Sacc. Myc. Ital. *214;* Krieger, Fungi Sax. *13;* Sydow, Myc. Mar. *1203;* Ellis & Ev. Fungi Columb. *1204.*

11. **Fomes fraxinophilus** (Peck) Sacc. Syll. Fung. **6**: 172. 1888.

Polyporus fraxinophilus Peck, Ann. Rep. N. Y. State Mus. **35**: 136. 1882.

Pileus woody, subtriangular, compressed-ungulate, usually decurrent, 5–10 × 6–12 × 2–4 cm.; surface white, pulverulent or finely tomentose, concentrically sulcate, becoming gray or black and rimose with age; margin tumid, white or yellowish, velvety to the touch: context corky to woody, zonate, isabelline, 0.5–1 cm. thick; tubes evenly but indistinctly stratified, 2–4 mm. long each season, white when young, concolorous with the context in the older layers, mouths white, subcircular, 2 to a mm., edges obtuse: spores broadly ellipsoid, smooth, hyaline, thin-walled, 6–7 × 7–8 μ; hyphae light yellowish-brown, 10–12 μ; cystidia none.

TYPE LOCALITY: Coeymans, New York.
HABITAT: Trunks of species of *Fraxinus.*
DISTRIBUTION: New York to Nebraska and south to Missouri and Virginia.
ILLUSTRATION: Bull. U. S. Dep. Agr. Pl. Ind. **32**: *pl. 2.* 1903.
EXSICCATI: Ellis & Ev. N. Am. Fungi *3302.*

12. **Fomes Laricis** (Jacq.) Murrill, Bull. Torrey Club **30**: 230. 1903.

Boletus Laricis Jacq. Misc. Austr. 1: 164. 1778.
Boletus officinalis Vill. Hist. Pl. Dauph. 3: 1041. 1789.
Boletus purgans Pers. Syn. Fung. 531. 1801.
Polyporus officinalis Fries, Syst. Myc. 1: 365. 1821.
Fomes albogriseus Peck, Bull. Torrey Club **30**: 97. 1903. (Type from Michigan.)

Pileus firm, at length fragile, ungulate to cylindrical, 3–8 × 5–10 × 4–20 cm.; surface anoderm, powdery, white or slightly yellowish, concentrically sulcate, becoming slightly encrusted, tuberculose and rimose; margin obtuse, concolorous: context soft, tough, at length friable, chalk-white or slightly yellowish, very bitter, with the odor of fresh meal, 1–3 cm. thick; tubes evenly stratified, concolorous, 5-10 mm. long each season, mouths circular to angular, 3–4 to a mm., edges thin, fragile, white, becoming discolored and lacerate, wearing away with age: spores ovoid, smooth, hyaline, 4 × 5 μ; hyphae 5 μ; cystidia none.

TYPE LOCALITY: Austria.
HABITAT: In Europe, on living larch; in America, on living larch, pine and spruce.
DISTRIBUTION: Michigan, Montana, California, and British Columbia; also in Europe and Asia.
ILLUSTRATIONS: Jacq. Misc. Austr. 1: *pl. 20–21;* Bull. Herb. Fr. *pl. 296.*

13. **Fomes rubritinctus** Murrill, Bull. Torrey Club **30**: 232. 1903.

A large perennial plant of many layers, the upper partly dead and discolored, the lower smooth, light-colored and anoderm, with large pores, which become dark-red when bruised. Pileus corky to woody, dimidiate, convex, 4–12 × 5–15 × 3–10 cm.; surface anoderm, smooth, velvety to the touch, white or pallid, becoming dark-brown and roughened with age; margin obtuse, sterile, concolorous: context corky, becoming woody, pallid, 1.5 cm. thick; tubes unevenly stratified, the layers separated by unusually thick cushions of context, 0.5–1 cm. long each season, 2 to a mm., isabelline within, becoming umbrinous in the older layers, mouths subcircular or polygonal, edges thin, isabelline, becoming dark-red when bruised: spores ovoid to globose, 5–7 μ long, smooth, hyaline, wall of medium thickness; hyphae hyaline.

TYPE LOCALITY: Nicaragua.
HABITAT: Dead trunks.
DISTRIBUTION: Known only from the type locality.

14. **Fomes populinus** (Schum.) Cooke, Grevillea **14**: 20. 1885.

Boletus populinus Schum. Enum. Pl. Saell. 2: 384. 1803.
Poria obducens Pers. Myc. Eur. 2: 104. 1825.
Polyporus connatus Weinm. Fl. Ross. 332. 1836. — Weinm. En. Stirp. Petrop. 208. 1837. Not *Polyporus connatus* Schw. 1832.
Polyporus connatus Fries, Epicr. Myc. 472. 1838.
Fomes connatus Gill. Champ. Fr. 1: 684. 1878.

Pileus corky to woody, effused-reflexed, rarely applanate, 2–4 × 5–10 × 1–3 cm.; surface anoderm, velvety, white or yellowish, usually overgrown with moss or otherwise disfigured with age; margin acute, slightly deflexed, concolorous, blackish where bruised, becoming thicker with age: context punky to corky, white to ochroleucous, 3–8 mm. thick; tubes very distinctly stratified, 1–2 mm. long each season, concolorous, with a resinous luster, mouths subcircular to angular, minute, 5–6 to a mm., edges thin, uneven, white to cremeous, glistening: spores globose, thin-walled, hyaline, smooth, 3–4 μ.

TYPE LOCALITY: Island of Zealand, Denmark.
HABITAT: Wounds on trunks of living maple, poplar, linden, beech, and a few other deciduous trees.
DISTRIBUTION: Canada to Florida and west to Missouri.
ILLUSTRATIONS: Fries, Ic. Hymen. *pl. 185. f. 2;* Gill. Champ. Fr. *pl. 466.*
EXSICCATI: Rab. Fungi Eur. *1410;* Sydow, Myc. Mar. *1302, 1710;* Ellis, N. Am. Fungi *917;* Thüm. Myc. Univ. *407.*

15. **Fomes Meliae** (Underw.) Murrill, Bull. Torrey Club **30**: 232. 1903.

Polyporus Meliae Underw. Bull. Torrey Club 24: 85. 1897.

Pileus corky, conchate or ungulate, thick and decurrent at the base, often imbricate, 3–5 × 5-8 × 1–3 cm.; surface anoderm, nearly smooth, subtomentose to glabrous, dirty-white; margin obtuse, concolorous: context corky, pallid, indistinctly zonate, 0.5–1 cm. thick; tubes unevenly stratose, 3–6 mm. long each season, cremeous, becoming discolored, mouths circular, 5 to a mm., edges usually obtuse, firm, entire, becoming smoky-white, and the hymenium cracking in all directions with age: spores oblong, smooth, hyaline, 3 × 6 μ.

TYPE LOCALITY: Alabama, on branches of *Melia Azederach.*
HABITAT: Branches of *Melia*, *Gleditsia*, and *Fraxinus.*
DISTRIBUTION: Known only from Alabama.

16. **Fomes Auberianus** (Mont.) Murrill, Bull. Torrey Club **32**: 491. 1905.

Polyporus Auberianus Mont. Pl. Cell. Cuba 397. 1842.

Pileus woody, conchate to pulverulent, 4–10 × 7–15 × 1–2 cm.; surface glabrous, rugose, radiate-striate, zonate, isabelline to light-fulvous; margin thin, but usually obtuse, pallid, turning bay when bruised, ungulate to lobed, deflexed: context corky to woody, almost white, 0.5–1.5 cm. thick; tubes distinctly stratose, 3–7 mm. long each season, fulvous within, mouths circular to angular, minute, 6–7 to a mm., edges thin, entire, light-bay, darker when bruised, subglistening: spores globose, smooth, hyaline, 3 μ; hyphae hyaline, 6 μ; cystidia none.

TYPE LOCALITY: Cuba, on dead trunks.
HABITAT: Dead or wounded trunks of hardwood trees.
DISTRIBUTION: Tropical America.
ILLUSTRATION: Mont. Pl. Cell. Cuba *pl. 16, f. 1.*

17. **Fomes geotropus** Cooke, Grevillea **13**: 119. 1884.

Polyporus geotropus Cooke, Grevillea 13: 32. 1884.

Pileus woody, conchate, very thick behind, 6–12 × 10–20 × 2–4 cm.; surface pruinose to glabrous, roughly rugose, anoderm, azonate, irregularly concentrically undulate, stramineous to cremeous; margin tumid, pallid, brownish when bruised, slightly undulate, deflexed: context corky, pallid to isabelline, 0.5–1.3 cm. thick; tubes distinctly stratified, 0.5–1.5 cm. long each season, pale chestnut-colored, fading out in the older layers, mouths circular, minute, 5 to a mm., edges thin, entire, rose-colored when fresh, becoming darker and discolored with age or when bruised: spores smooth, hyaline.

TYPE LOCALITY: Demerara, British Guiana.
HABITAT: Dead trunks.
DISTRIBUTION: Gulf states and tropical America.
EXSICCATI: Ellis, N. Am. Fungi *1103.*

DOUBTFUL SPECIES

Polyporus aegerita Fries, Nov. Symb. 70. 1851. Collected on trunks in Mexico by Liebmann. Apparently allied to *Fomes geotropus*, but smaller.

Boletus microporus Sw. Fl. Ind. Occ. 3: 1925. 1806. Collected by Swartz on trunks in Jamaica. The description suggests *Fomes Auberianus* or *Fomes geotropus*, or possibly *Rigidoporus micromegas. Coriolus sector* was called by Schweinitz *Polyporus microporus.*

66. **FOMITELLA** Murrill, Bull. Torrey Club **32**: 365. 1905.

Hymenium sessile, at times semi-resupinate, applanate, epixylous; surface glabrous, anoderm to encrusted, sulcate with age: context woody or slightly punky, brownish-olivaceous, rarely varying to pallid; tubes minute, cylindrical, usually thick-walled, more or less stratose at maturity: spores smooth, hyaline.

Type species, *Boletus supinus* Sw.

Tubes small, 5 to a mm., 1–3 mm. long each season. 1. *F. supina.*
Tubes large, 1–2 to a mm., 3–5 mm. long each season. 2. *F. fumoso-avellanea.*

1. **Fomitella supina** (Sw.) Murrill, Bull. Torrey Club **32**: 365. 1905.

Boletus resupinatus Sw. Prodr. 149. 1788. Not *Boletus resupinatus* Muell. Fl. Dan. *pl. 894.* 1782.
Boletus supinus Sw. Fl. Ind. Occ. 1926. 1806.
Polyporus Valenzuelianus Mont. Pl. Cell. Cuba 398. *pl. 15, f. 4.* 1842.
Polyporus guadelupensis Lév. Ann. Sci. Nat. III. 5: 134. 1846. (Type from Guadeloupe.)
Polyporus hemileucus Berk. & Curt. Jour. Linn. Soc. **10**: 312. 1868. (Type from Cuba.)
Polyporus plebeius cubensis Berk. & Curt. Jour. Linn. Soc. **10**: 313. 1868. (Type from Cuba.)
Polyporus subolivaceus Berk. & Curt. Jour. Linn. Soc. **10**: 313. 1868. (Type from Cuba.)
Polyporus venezuelae Cooke, Grevillea **15**: 20. 1886. (Type from Venezuela.)

Pileus rigid, corky to woody, dimidiate, thin, sessile, imbricate, plane or concave below, 4–6 × 5–10 × 0.5–1 cm.; surface finely tomentose to glabrous, azonate, smooth or rugose, varying from white to umbrinous, often blotched with purple or entirely purplish-black behind: context corky, zonate, greenish-isabelline to olivaceous, 2–6 mm. thick; tubes normally perennial, annual in many specimens, indistinctly stratose, 1–3 mm. long each season, isabelline to grayish-umbrinous within, mouths circular, rarely elongate, 5 to a mm., edges rather thin at maturity, entire but slightly uneven, isabelline to umbrinous: spores globose, smooth, hyaline, 4 μ; hyphae 6 μ.

TYPE LOCALITY: Jamaica.
HABITAT: Various forms of deciduous wood.
DISTRIBUTION: Southern United States and tropical America.
ILLUSTRATIONS: Mont. Pl. Cell. Cuba *loc. cit.*
EXSICCATI: Ellis & Ev. N. Am. Fungi *1704;* Ule, Myc. Bras. *43.*

2. **Fomitella fumoso-avellanea** (Romell) Murrill.

Trametes fumoso-avellanea Romell, Bih. Sv. Vet.-Akad. Handl. **26** (3)[16]: 37. 1901.

Pileus corky, sessile, imbricate, decurrent, applanate, convex below, triangular in section, 2–4 × 5–10 × 1–2.5 cm.; surface anoderm, tomentose, uneven, azonate, opaque, dull-colored, avellaneous to umbrinous; margin usually thin, isabelline, rarely purplish-tinted, smooth, entire: context soft-corky, homogeneous, olivaceous-umbrinous, 5 mm. thick; tubes indistinctly stratified, 3–5 mm. long each season, avellaneous to umbrinous, mouths angular, somewhat irregular, 1–2 to a mm., edges thin, entire, umbrinous, purplish-tinted in some specimens: spores obliquely ellipsoid, smooth, hyaline, 3.5–4 × 2 μ; hyphae 2–3 μ; cystidia absent.

TYPE LOCALITY: Paraguay.
HABITAT: Dead trunks.
DISTRIBUTION: Cozumel Island; Nicaragua; Costa Rica; also in Colombia and Paraguay.
ILLUSTRATION: Bih. Sv. Vet.-Akad. Handl. **26** (3)[16]: *pl. 2, f. 37.*

DOUBTFUL SPECIES

Polyporus sordidus Lév. Ann. Sci. Nat. III. **2**: 192. 1844. Collected on trunks in America. It bears some resemblance to *F. supina.*

67. **PYROPOLYPORUS** Murrill, Bull. Torrey Club **30**: 109. 1903.

Mison Adans. Fam. **2**: 10; hyponym. 1763.
Agaricon Adans. Fam. **2**: 10. 1763. Not *Agaricus* L. 1753.
Phellinus Quél. Ench. Fung. 172. 1886. Not *Phelline* Poir. 1826.

Hymenophore large, perennial, epixylous, sessile, ungulate or applanate; surface sulcate, usually anoderm and often rough or rimose: context woody or punky, brown, rarely dark-red; tubes brown, cylindrical, stratose, usually thick-walled: spores smooth, ferruginous, rarely hyaline.

Type species, *Boletus igniarius* L.

Pileus thick, ungulate.
Context light- to dark-brown.
Surface brown or gray, often becoming blackish and rimose after several years.
Surface finally blackish and often rimose with age; species temperate.

Context fulvous, opaque.
Spores hyaline ; tubes thick-walled.
Pileus simple, sulcate, sometimes polished, margin usually narrow and rounded ; not found on species of *Prunus*. 1. *P. igniarius.*
Pileus terraced, imbricate or semi-resupinate, rarely sulcate, never polished, margin broad, making an obtuse angle ; found on species of *Prunus*. 2. *P. fulvus.*
Spores yellowish-brown ; tubes thin-walled. 3. *P. Everhartii.*
Context melleous, lustrous.
Pileus small, 5 cm. broad ; found on *Juniperus*. 4. *P. texanus.*
Pileus large, 8 cm. or more broad ; found on *Betula*. 5. *P. Bakeri.*
Surface remaining brown, with crust entire ; species tropical.
Hymenium roseocinereous to smoky-gray. 6. *P. roseocinereus.*
Hymenium ferruginous to fulvous.
Context ferruginous ; surface dark-brown, marked with narrow black concentric lines ; tubes thin-walled, 5 to a mm. 7. *P. inflexibilis.*
Context tawny ; surface black, without lines and more sulcate ; tubes smaller, thick-walled, 7 to a mm. 8. *P. Calkinsii.*
Surface black or nearly so and soon becoming very rimose ; species all brown-spored.
Species confined to temperate regions.
Tubes short, 1–5 mm. long each season ; found abundantly on *Robinia*. 9. *P. Robiniae.*
Tubes long, over 5 mm. long each season ; found rarely and only on *Quercus*. 10. *P. praerimosus.*
Species confined to the tropics.
Pileus very large, 12 cm. or more broad, margin rounded. 11. *P. Cedrelae.*
Pileus scarcely attaining 12 cm. in width, margin angular.
Tubes large for the genus, 3–4 to a mm., thin-walled ; spores 7 × 9 μ, cystidia none. 12. *P. Underwoodii.*
Tubes 5–7 to a mm., thick-walled.
Pileus applanate, dimidiate, of light weight and soft-woody texture. 13. *P. yucatanensis.*
Pileus ungulate, conical, pendulous, vertically attached, of heavy weight and stony texture. 14. *P. dependens.*
Context reddish-fulvous to latericeous ; species very rare, found only on *Juniperus*.
Older pores visible in projecting annual layers ; tubes 3–4 to a mm., thin-walled ; pileus deeply furrowed, not rimose. 15. *P. juniperinus.*
Older pores not externally visible ; tubes 1–2 to a mm., thicker-walled ; surface very rimose. 16. *P. Earlei.*
Pileus thin or of moderate thickness, conchate to applanate, never truly ungulate.
Context ferruginous to fulvous.
Surface soon covered with a thick, glabrous, horny, dark crust.
Tube-layers very prominent, tubes stuffed with white mycelium. 17. *P. grenadensis.*
Tube-layers distinct but not prominent, tubes not conspicuously stuffed.
Dissepiments thick ; hymenium concolorous with the context ; surface not rimose with age. 18. *P. pseudosenex.*
Dissepiments thin ; hymenium at length darker than the context ; surface rimose in age. 19. *P. jamaicensis.*
Surface anoderm or slightly encrusted.
Hymenium chestnut-brown, glistening ; tubes 3–5 mm. long each season ; pileus large, velvety, ferruginous to fulvous. 20. *P. Robinsoniae.*
Hymenium isabelline to fulvous.
Pileus broadly effused, slightly reflexed, often wholly resupinate ; spores globose, hyaline, 4–5 μ ; cystidia present. 21. *P. conchatus.*
Pileus turbinate-conical, attached at the vertex ; spores ovoid, hyaline, 6–7 × 4–5 μ ; cystidia none. 22. *P. Baccharidis.*
Pileus dimidiate to flabelliform, normally attached.
Surface conspicuously tomentose, soft to the touch ; tubes short, fulvous within.
Tubes 5–6 to a mm.
Context punky, opaque ; found on species of *Ribes* in temperate regions. 23. *P. Ribis.*
Context corky to woody, with a silky luster ; found on trunks of trees in Mexico and Central America. 24. *P. linteus.*
Tubes very minute, 8–10 to a mm.
Pileus 4–8 cm. broad, concave below, surface remaining conspicuously tomentose. 25. *P. subpectinatus.*
Pileus 10–25 cm. broad, plane below, surface becoming quite glabrous. 26. *P. Langloisii.*
Surface soon encrusted, hard ; tubes avellaneous within, 4–6 mm. long each season. 27. *P. calcitratus.*
Context flavous to luteous.
Surface conspicuously fibrose-lacerate. 28. *P. sarcitus.*
Surface inconspicuously tomentose or glabrous.

Pileus very large, 15–30 cm. broad ; context marked with interlacing lines of a lighter color. 29. *P. extensus.*
Pileus 8–12 cm. broad ; context homogeneous.
Surface almost free from markings ; tubes 2–6 mm. long each season ; found on mesquite. 30. *P. sublinteus.*
Surface distinctly zonate and shallowly furrowed ; tubes 5–10 mm. long each season ; found on logwood. 31. *P. Haematoxyli.*

1. **Pyropolyporus igniarius** (L.) Murrill, Bull. Torrey Club **30** : 110. 1903.

Boletus igniarius L. Sp. Pl. 1176. 1753.
Polyporus igniarius Fries, Syst. Myc. 1 : 375. 1821.
Polyporus nigricans Fries, Syst. Myc. 1 : 375. 1821.
? *Polyporus hyperboreus* Berk. Ann. Mag. Nat. Hist. 7 : 453. 1841. (Type from Arctic North America.)
? *Polyporus Novae-Angliae* Berk. & Curt. Grevillea 1 : 51. 1872. (Type from New England.)
Fomes igniarius Gill. Champ. Fr. 1 : 687. 1878.
Phellinus igniarius Quél. Ench. Fung. 172. 1886.

Pileus woody, ungulate, sessile, 6–7 × 8–10 × 5–12 cm.; surface smooth, encrusted, opaque, velvety to glabrous, ferruginous to fuscous, becoming black and rimose with age ; margin obtuse, sterile, ferruginous to hoary, tomentose : context woody, distinctly zonate, ferruginous to fulvous, 2–3 cm. thick ; tubes evenly stratified, 2–4 mm. long each season, fulvous, whitish-stuffed in age, mouths circular, minute, 3–4 to a mm., edges obtuse, ferruginous to fulvous, hoary when young : spores globose, smooth, hyaline, 6–7 μ ; spines 10–25 × 5–6 μ.

TYPE LOCALITY : Sweden.
HABITAT : Trunks of various diseased deciduous trees.
DISTRIBUTION : North temperate and arctic regions of all lands.
ILLUSTRATION : Gill. Champ. Fr. *pl. 290.*
EXSICCATI : Roum. Fungi Sel. *6268, 7388 ;* Krieger, Schädl. Pilz. *20 ;* Thüm. Fungi Austr. *1007 ;* Thüm. Myc. Univ. *105 ;* Eriksson, Fungi Par. Scand. *78 ;* Allesch. & Schn. Fungi Bavar. *327, 433;* Desmaz. Pl. Crypt. *2156 ;* Krieger, Fungi Sax. *526 ;* Sydow, Myc. Mar. *460, 1603.*

2. **Pyropolyporus fulvus** (Scop.) Murrill, Bull. Torrey Club **30** : 112. 1903.

Boletus fulvus Scop. Fl. Carn. ed. 2. **2** : 469. 1772.
Fomes fulvus Gill. Champ. Fr. **1** : 687. 1878.

Pileus woody, triquetrous, rarely ungulate, thick and broadly attached behind, 1–3 × 5–7 × 3–8 cm.; surface smooth, very slightly sulcate, velvety, ferruginous, becoming horny and glabrous and finally nearly black with age ; margin subobtuse, ferruginous, velvety : context woody, fulvous, 1–2 cm. thick ; tubes evenly stratified, 2–3 mm. long each season, fulvous, mouths circular, 3 to a mm., edges obtuse, entire, ferruginous to fulvous : spores globose, compressed on one side, hyaline, 5.5–6 × 4.5–5 μ ; spines fulvous, ventricose, 15–20 × 7–9 μ ; hyphae 2.5–3 μ.

TYPE LOCALITY : Carniola.
HABITAT : Diseased trunks and stumps of various species of *Prunus.*
DISTRIBUTION : North America ; also in Europe.
ILLUSTRATION : Fries, Ic. Hymen. *pl. 184, f. 3.*
EXSICCATI : Roum. Fungi Sel. *6963, 7389 ;* Desmaz. Pl. Crypt. *2157 ;* Kunze, Fungi Sel. *202.*

3. **Pyropolyporus Everhartii** (Ellis & Gall.) Murrill, Bull. Torrey Club **30** : 114. 1903.

Mucronoporus Everhartii Ellis & Gall. Jour. Myc. 5 : 141. 1889.

Pileus woody, dimidiate, ungulate, broadly attached behind, 6–10 × 6–15 × 3–8 cm.; surface glabrous, slightly encrusted, deeply sulcate, not polished, gray to brownish-black, slightly rimose in age; margin obtuse, covered with ferruginous tomentum, becoming gray and glabrous : context corky to woody, repeatedly zoned, fulvous in dried specimens, 2–3 cm. thick ; tubes evenly stratified, 0.5–1 cm. long each season, fulvous, mouths cir-

cular, 4 to a mm., edges rather thin, entire, ferruginous to fulvous, glistening, the hymenium becoming much cracked in age: spores globose, smooth, ferruginous, 3–4.5 μ; spines abundant, pointed, larger at the base, 15–25 $\times$ 6–10 μ.

TYPE LOCALITY: New Jersey.
HABITAT: Living trunks of species of oak and occasionally on beech.
DISTRIBUTION: Eastern Canada to Delaware and Missouri.
ILLUSTRATION: Jour. Myc. 5: *pl. 12.* 1889.
EXSICCATI: Ellis & Ev. N. Am. Fungi *3303;* Ellis & Ev. Fungi Columb. *401;* Ellis, N. Am. Fungi *915.*

4. **Pyropolyporus texanus** Murrill, sp. nov.

Pileus woody, ungulate, broadly attached, plane below, 3 $\times$ 5 $\times$ 4 cm.; surface tomentose, smooth, melleous, becoming gray or black, glabrous and somewhat rimose behind; margin very obtuse and rounded, melleous, tomentose, smooth: context woody, distinctly zonate, 2.5 cm. thick, melleous to dark-luteous with silky luster; tubes evenly stratified, not separated by layers of context, 5 mm. long each season, concolorous, without luster, mouths circular, 4–5 to a mm., edges obtuse, entire, melleous to fulvous: spores globose, smooth, hyaline, 3–4 μ; hyphae brown, 6 μ; cystidia none.

Type collected in Texas on *Juniperus*, 1900–1901, *W. H. Long Jr. 327.*
DISTRIBUTION: Known only from the type locality.

5. **Pyropolyporus Bakeri** Murrill, sp. nov.

Pileus woody, compressed-ungulate to applanate, dimidiate, slightly decurrent, 4–10 $\times$ 8–20 $\times$ 3–5 cm.; surface smooth, anoderm, becoming glabrous, 2–3 times deeply sulcate, isabelline to gray or umbrinous; margin very broad and rounded, ferruginous, finely tomentose, perfectly smooth: context woody, dark-luteous, somewhat shining, 1.5–2 cm. thick; tubes distinctly stratified, 5–7 mm. long each season, avellaneous to fulvous within, mouths circular, 4 to a mm., edges obtuse, entire, light-yellowish to fuliginous: spores globose, smooth, hyaline, 5 μ.

Type collected at St. Croix Falls, Wisconsin, on black birch trunks, November, 1897, *C. F. Baker 470.*
DISTRIBUTION: Wisconsin.

6. **Pyropolyporus roseocinereus** Murrill, sp. nov.

Pileus woody, hard, applanate to compressed-ungulate, often vertically attached, 5–8 $\times$ 7–14 $\times$ 2–4 cm.; surface tomentose, becoming glabrous, horny-encrusted, repeatedly zonate-sulcate, fulvous to reddish-brown; margin acute, undulate, ferruginous, tomentose: context woody, very thin, light-fulvous, 1–2 mm. thick; tubes indistinctly stratified, 1–2 mm. long each season, fulvous within, mouths circular, very minute, 5–6 to a mm., edges obtuse, entire, roseocinereous to smoky-gray: spores globose to ovoid, smooth, hyaline, 3–4 $\times$ 5–6 μ; hyphae brown, 8 μ; cystidia none.

Type collected at Alto Cedro, Cuba, on dead wood in a dense virgin forest, March 19, 1905, *F. S. Earle & W. A. Murrill 561.*
DISTRIBUTION: Costa Rica; Cuba.

7. **Pyropolyporus inflexibilis** (Berk.) Murrill.

Polyporus inflexibilis Berk. Jour. Bot. & Kew Misc. **8**: 199. 1856.
Pyropolyporus crustosus Murrill, Bull. Torrey Club **30**: 113. 1903. (Type from Jamaica.)

An ungulate plant of medium size with brown tubes, ferruginous substance and smooth encrusted dark-brown surface. Pileus woody, convex above, plane below, somewhat compressed-ungulate, 7 $\times$ 12 $\times$ 5 cm.; surface glabrous, horny-encrusted, dark-brown, concentrically sulcate, marked with narrow black concentric lines; margin rounded, yellowish-brown, sterile: context hard, concentrically banded, ferruginous, 2 cm. thick behind; tubes indistinctly stratified, 0.5–1 cm. long each season, 5–6 to a mm., drab-colored within, mouths polygonal, concolorous, edges thin, acute, entire: spores globose to ovoid, smooth, thin-walled, hyaline, 3.5–4 $\times$ 4 μ; hyphae darker; cystidia none.

TYPE LOCALITY: Panuré, Brazil.
HABITAT: Dead trunks of trees.
DISTRIBUTION: Jamaica; also in Brazil.

8. **Pyropolyporus Calkinsii** Murrill, Bull. Torrey Club **30**: 113. 1903.

A large ungulate plant, glabrous and furrowed above and uniformly hard and fulvous within. Pileus very hard, woody throughout, ungulate, 10 × 10 × 10 cm.; surface glabrous, dark-brown to black, marked with rather shallow concentric furrows, crust thin, horny, never rimose; margin rounded, concolorous with the hymenium: context very hard, woody, fulvous, 1 cm. thick; tubes in many indistinct layers, slender, minute, 7 to a mm., fulvous, mouths nearly circular, edges obtuse, entire: spores ovoid, hyaline, with thick, smooth, pale-ferruginous wall, 3–5 × 5–7 μ; hyphae ferruginous; cystidia none.

TYPE LOCALITY: Florida.
HABITAT: Living trunks of live-oak.
DISTRIBUTION: Florida.

9. **Pyropolyporus Robiniae** Murrill, Bull. Torrey Club **30**: 114. 1903.

A large fungus with dark rimose surface and tawny hymenium, very common on *Robinia Pseudacacia*. Pileus hard, woody, dimidiate, ungulate to applanate, 5–25 × 5–50 × 2–12 cm.; surface velvety, smooth, soon becoming very rimose and roughened, fulvous to purplish-black, at length dull-black, deeply and broadly concentrically sulcate; margin rounded, velvety, fulvous: context hard, woody, concentrically banded, 1–3 cm. thick, fulvous; tubes stratose, 0.15–0.5 cm. long, 5 to a mm., fulvous, mouths subcircular, edges entire, equaling the tubes in thickness: spores subglobose, smooth, thin-walled ferruginous, copious, 4–5 μ; cystidia none.

TYPE LOCALITY: Virginia.
HABITAT: On living trunks of *Robinia Pseudacacia*.
DISTRIBUTION: Connecticut to Florida and west to Missouri and Texas.
ILLUSTRATIONS: Rep. Mo. Bot. Gard. **12**: *pl. 1–3*. 1901.

10. **Pyropolyporus praerimosus** Murrill, Bull. Torrey Club **30**: 115. 1903.

A large ungulate plant with plane brown hymenium and a very rimose blackish surface. Pileus woody, rounded-ungulate, 8–12 × 7–10 × 8–11 cm.; surface exceedingly rimose after the first year, broadly furrowed, the projecting ridges splitting away in age, very dark-brown to black; margin obtuse, velvety, rusty to hoary: context corky to woody, concentrically banded, fulvous, 0.5 cm. or less thick; tubes indistinctly stratified, 1–2 cm. long each season, 3 to a mm., concolorous within and without with the context, mouths rounded to polygonal, ochraceous at first, edges rather thick, obtuse, becoming thin and often splitting in age: spores globose, smooth, deep-ferruginous, 3–4 μ; spines ferruginous, 10–17 × 5–10 μ; largest at the base.

TYPE LOCALITY: El Capitan Mountains, New Mexico, at an altitude of 2100 meters.
HABITAT: Trunks of *Quercus undulata*.
DISTRIBUTION: Known only from the type locality.

11. **Pyropolyporus Cedrelae** Murrill, sp. nov.

Pileus woody, hard, compressed-ungulate, broadly attached, plane below, 7–12 × 8–25 × 3–7 cm.; surface tomentose, deeply sulcate, fulvous, becoming very rough, rimose and black with age; margin obtuse, ferruginous to fulvous, tomentose, smooth: context corky to woody, 5–10 mm. thick, fulvous; tubes evenly stratified, 2–3 mm. long each season, fulvous within, mouths circular, invisible to the unaided eye, 5–6 to a mm., edges obtuse, entire, ferruginous to fulvous: spores globose, smooth, golden-brown, 5–6 μ, concolorous with the hyphae.

Type collected at Bluefields, Jamaica, on a living trunk of *Cedrela odorata*, November 10, 1902, *F. S. Earle 450*.
DISTRIBUTION: Known only from the type locality.

12. **Pyropolyporus Underwoodii** Murrill, Bull. Torrey Club **30**: 116. 1903.

A blackish ungulate plant of large size, with furrowed rimose surface and long brown tubes. Pileus woody, broadly ungulate, attached by a narrow base, concave below, $7 \times 14 \times 11$ cm.; surface many times concentrically furrowed, rimose, uniformly dark-brown to black; margin fulvous, acute or somewhat obtuse, velvety, undulate, marked with narrow zones: context hard, fulvous to dark-brown, very thin, less than 0.5 cm.; tubes distinctly stratified, 0.5–1.5 cm. long each season, 3–4 to a mm., brown within, mouths darker, circular or polygonal, edges acute, entire: spores ellipsoid, smooth, thin-walled, light yellowish-brown, $7 \times 9 \mu$; cystidia none.

TYPE LOCALITY: Coama Springs, Porto Rico.
HABITAT: On dead wood.
DISTRIBUTION: Bahamas; Cuba; Jamaica; Porto Rico; St. Thomas.

13. **Pyropolyporus yucatanensis** Murrill, Bull. Torrey Club **30**: 119. 1903.

A large blackish-brown, very rimose fungus, with tawny tubes and substance. Pileus woody, dimidiate, applanate, thickest behind, $7–9 \times 9–12 \times 2–3$ cm.; surface clothed at first with tawny tomentum, becoming very dark-brown or black and uniformly tubercular and broken into small areas by numerous shallow concentric furrows and radial cracks; margin narrow, acute, velvety, fulvous: context hard, fulvous, 0.5 cm. thick; tubes rather indistinctly stratified, 0.25 cm. long each season, 7 to a mm., fulvous, mouths circular, punctate, edges thick, obtuse: spores globose or subglobose, smooth, pale yellowish-brown, $3.5–5 \mu$; hyphae ferruginous; cystidia thick at the base, pointed, $17–35 \mu$.

TYPE LOCALITY: Yucatan.
HABITAT: Dead wood.
DISTRIBUTION: Yucatan and Nicaragua.

14. **Pyropolyporus dependens** Murrill, sp. nov.

Pileus very hard, woody, ungulate, attenuate and vertically affixed behind, $3–5 \times 4–8 \times 4–8$ cm.; surface black, very rough and rimose, horny-encrusted, repeatedly slightly sulcate; margin abruptly acute, rarely rounded, velvety, ferruginous, undulate: context hard, woody, fulvous, very thin and inconspicuous; tubes indistinctly stratified, 2–3 mm. long each season, ferruginous within, becoming dark-fulvous in the older layers, mouths circular, minute, 5–6 to a mm., edges obtuse, entire, fulvous to chestnut-brown, glistening: spores globose, smooth, brown, 3μ; hyphae 3μ; cystidia none.

Type collected at Alto Cedro, Cuba, on decaying hardwood trunks, March, 1903, *L. M. Underwood & F. S. Earle 1508*.
DISTRIBUTION: Cuba; Bahamas.

15. **Pyropolyporus juniperinus** (Schrenk) Murrill, Bull. Torrey Club **30**: 116. 1903.

Polyporus juniperinus Schrenk, Bull. U. S. Dep. Agr. Veg. Phys. **21**: 9. 1900.

Pileus woody, ungulate, $3–5 \times 5–8 \times 5–7$ cm.; surface tomentose, deeply sulcate, ferruginous to gray, at length rough and grayish-black; margin obtuse, velvety, melleous or ferruginous to hoary: context corky to woody, reddish-fulvous, 0.5–1 cm. thick; tubes indistinctly stratified, 0.5–1 cm. long each season, melleous within, reddish-fulvous in the older layers, mouths circular to angular, 2–3 to a mm., edges rather thin, entire, even, melleous: spores reddish-brown, smooth; spines blunt, only slightly projecting.

TYPE LOCALITY: Tennessee.
HABITAT: Trunks of *Juniperus virginiana*.
DISTRIBUTION: Tennessee and Kentucky.
ILLUSTRATIONS: Schrenk, *loc. cit. pl. 1–4*.

16. **Pyropolyporus Earlei** Murrill, Bull. Torrey Club **30**: 116. 1903.

A broadly ungulate plant with yellow pores, red context and a dark, very rimose, surface. Pileus woody, attached by a broad base, plane below, 6 × 13 × 17 cm.; surface concentrically sulcate, very rimose in older parts, fulvous to brownish-black, at length grayish-black from weathering; margin broad, obtuse, dark yellowish-orange, clothed with short dense tomentum of the same color: context woody, dark reddish-orange, concentrically banded with darker lines, very thin, 0.5 cm., rimose down to the tubes; tubes unevenly stratified, 0.5–0.75 cm. long each season, 1–2 to a mm., ochraceous within during the first season, afterwards latericeous, mouths circular, ochraceous, edges obtuse, rather thin: spores ellipsoid, smooth, thick-walled, ferruginous, 7–8 × 9 μ.

TYPE LOCALITY: El Capitan Mountains, New Mexico, at an altitude of 2100 meters.
HABITAT: Standing trunk of cedar.
DISTRIBUTION: Known only from the type locality.

17. **Pyropolyporus grenadensis** Murrill, sp. nov.

Pileus woody, hard, applanate or very compressed-ungulate, nearly circular to dimidiate, narrowly attached and considerably thicker behind, 5–12 × 7–15 × 1.5–4 cm.; surface rough, rugose, closely furrowed, tomentose, horny-encrusted, fulvous to dark chestnut-brown or black; margin obtuse, rounded in young plants, tomentose, fulvous, rather thin in large specimens: context woody, hard, fulvous, slightly lustrous, regularly zonate, 5–7 mm. thick; tubes very evenly and very distinctly stratified, the strata separated by very thin layers of context, 1–1.5 mm. long each season, fulvous, filled with white mycelium, mouths circular, minute, 5 to a mm., edges thick, entire, fulvous to fuliginous: spores globose, smooth, light yellowish-brown, 3–4 μ; hyphae light yellowish-brown, 3.5 μ in diameter; spines absent.

Type collected in the mountain forests of Annandale, Grenada, on dead wood, February, 1906, *W. E. Broadway*.
DISTRIBUTION: Known only from the type locality.

18. **Pyropolyporus pseudosenex** Murrill, sp. nov.

Pileus very hard, woody, dimidiate, applanate, usually concave below, 12–20 × 15–30 × 2–3 cm.; surface glabrous, horny-encrusted, subshining, repeatedly slightly sulcate, chestnut-brown to nearly black; margin thin, subobtuse, undulate to lobed, ferruginous: context woody, ferruginous, 3–5 mm. thick; tubes evenly stratified, at times separated by layers of context, 2–3 mm. long each season, fulvous within, mouths circular, very minute, 6 to a mm., edges obtuse, entire, becoming dark-fulvous: spores globose, smooth, fulvous, copious, 4–5 μ; cystidia none.

Type collected in Nicaragua, in 1891–2, *C. L. Smith*.
HABITAT: Decayed trunks.
DISTRIBUTION: Mexico and Nicaragua.

19. **Pyropolyporus jamaicensis** Murrill, Bull. Torrey Club **30**: 120. 1903.

A rather fan-shaped plant, the upper layers of which are dead and much cracked and roughened, while the layers added below are smaller each succeeding year. Pileus woody, applanate, much thicker behind, 8 × 13 × 0.5–5 cm.; surface uneven, radiately rimose, dark-brown to black; margin ferruginous, velvety, acute, becoming black, spreading and lobed, projecting 1–2 cm. beyond the new layers: context woody, fulvous, 0.5–1 cm. thick; tubes stratified, separated by thin annual layers of context, 0.2–0.7 cm. long each season, 7 to a mm., fulvous within, mouths rounded or polygonal, hoary when young, edges thin,

acute, entire: spores globose or subglobose, thin-walled, smooth, pale golden-yellow (probably darker in age), 5–7 μ.

TYPE LOCALITY: Port Antonio, Jamaica.
HABITAT: Old stumps of *Psidium*.
DISTRIBUTION: Known only from the type locality.

20. **Pyropolyporus Robinsoniae** Murrill, sp. nov.

Pileus woody, dimidiate, applanate to compressed-ungulate, 5–7 × 7–10 × 1.5–3 cm., surface velvety, slightly encrusted, many times sulcate, very rough, tubercular, ferruginous to fulvous, corroded and darker with age; margin obtuse, velvety, ferruginous, sterile: context woody, fulvous, 3–5 mm. thick; tubes unevenly stratified, 3–5 mm. long each season, umbrinous within, mouths circular, minute, 4–5 to a mm., edges obtuse, entire; chestnut-brown, glistening: spores globose, smooth, hyaline, 4 μ; hyphae brown, 5 μ; cystidia none.

Type collected on Monkey Hill, Jamaica, on decaying roots of a tree, July 11, 1904, *Miss W. J. Robinson*.

DISTRIBUTION: Known only from the type locality.

21. **Pyropolyporus conchatus** (Pers.) Murrill, Bull. Torrey Club **30**: 117. 1903.

Boletus salicinus Pers.; Gmel. Syst. Nat. **2**: 1437. 1791. Not *B. salicinus* Bull. Herb. Fr. *pl. 433, f. 1.* 1789.
Boletus conchatus Pers. Obs. Myc. 1: 24. 1796.

Pileus woody, rigid, conchate, broadly effused and often entirely resupinate, 1–5 × 7–10 × 0.5–1.5 cm.; surface rough, tomentose, irregularly sulcate, anoderm, brown to black, becoming thinly encrusted and slightly rimose with age; margin acute, undulate, ferruginous to fulvous, tomentose: context woody, thin, fulvous, 1–3 mm. thick; tubes indistinctly stratified, 1–2 mm. long each season, fulvous, mouths circular, 5–6 to a mm., edges obtuse, ferruginous to fulvous: spores globose, smooth, hyaline, 4–5 μ; spines dark-brown, ventricose, 15–30 × 7–9 μ; hyphae luteous, 2–2.5 μ.

TYPE LOCALITY: Europe.
HABITAT: On dead deciduous wood.
DISTRIBUTION: Europe and North America.
ILLUSTRATION: Fries, Ic. Hymen. *pl. 185, f. 2.*
EXSICCATI: Krieger, Fungi Sax. *819;* Romell, Fungi Scand. *12;* Thüm. Fungi Austr. *1006;* Karst. Finl. Fungi *241;* Roum. Fungi Sel. *5505, 6230, 7330;* Ellis, N. Am. Fungi *918;* Thüm. Myc. Univ. *510;* Sydow, Myc. Mar. *3423;* Shear, N. Y. Fungi *36*.

22. **Pyropolyporus Baccharidis** (Pat.) Murrill.

Polyporus Baccharidis Pat. Bull. Soc. Myc. Fr. 9: 129. 1903.

Pileus corky-woody, turbinate-conical, vertically attached, pendulous, 3–6 × 3–6 × 1–2 cm.; surface densely pectinate-sulcate, soft and velvety, flavous to cinnamon, becoming glabrous, blackish, and thinly encrusted; margin obtuse, flavous, tomentose, undulate: context corky, ferruginous-fulvous, 2–3 mm. thick; tubes evenly stratified, 2–3 mm. long each season, fulvous-cinnamon within, mouths circular, invisible to the unaided eye, 10 to a mm., edges thin, entire, flavous-fuscous to chestnut-brown, slightly glistening: spores ovoid, smooth, hyaline, 6–7 × 4–5 μ; cystidia none.

TYPE LOCALITY: Rio Machangara, Cotocollao, Ecuador.
HABITAT: On trunks of *Baccharis oblongifolia*.
DISTRIBUTION: Guadeloupe; also in Ecuador.

23. **Pyropolyporus Ribis** (Schum.) Murrill, Bull. Torrey Club **30**: 118. 1903.

Boletus Ribis Schum. Enum. Pl. Saell. **2**: 336. 1803.
Polyporus ribesius Pers. Myc. Eur. **2**: 80. 1825.

Pileus tough, corky, becoming rigid, conchate, laterally connate, 3–5 × 5–10 × 0.7–1.5 cm.; surface rough, velvety, anoderm, indistinctly zoned, ferruginous to umbrinous, becom-

ing glabrous and slightly encrusted with age; margin undulate to lobed, ferruginous, furrowed: context punky, fulvous, 3–5 mm. thick; tubes indistinctly stratified, 1–2 mm. long each season, fulvous, mouths circular, 5–6 to a mm., edges rather thin, entire, ferruginous to fulvous, hoary when young: spores globose or subglobose, pale yellowish-brown, smooth, 3–4 × 3 μ; hyphae 2.5 μ; cystidia none.

TYPE LOCALITY: Island of Zealand, Denmark.
HABITAT: Living stems of red currant and other species of *Ribes;* occasionally on stems of adjacent shrubs, such as *Symphoricarpos*, when growing near a number of infected plants of one of the ordinary hosts.
DISTRIBUTION: New York, New Jersey, and Kansas; more widely distributed and more abundant in Europe.
ILLUSTRATION: Sturm, Deutsch. Fl. Pilze **3**: *pl. 62.*
EXSICCATI: Ellis & Ev. N. Am. Fungi *1693;* Zopf & Syd. Myc. Mar. *68;* Allesch. & Schn. Fungi Bavar. *139;* Krieger, Fungi Sax. *432;* Linhart, Fungi Hung. *349;* Rab.-Wint. Fungi Eur. *2937;* Thüm. Myc. Univ. *509;* Desmaz. Pl. Crypt. *314;* Roum. Fungi Gall. *3304.*

24. **Pyropolyporus linteus** (Berk. & Curt.) Murrill, Bull. Torrey Club **30**: 119. 1903.

Polyporus linteus Berk. & Curt. Proc. Am. Acad. 4: 122. 1860.

Pileus hard, heavy, dimidiate to nearly circular, applanate, 7–10 × 8–15 × 3–5 cm.; surface tomentose, fulvous, densely sulcate, clothed with lime-white hair, becoming darker and slightly rimose with age; margin obtuse, ferruginous to fulvous, tomentose: context corky to woody, melleous-ferruginous with silky luster, slightly zonate, 3–6 mm. thick; tubes indistinctly stratified, 3–5 mm. long each season, fulvous within, mouths circular, minute, 6 to a mm., edges rather thin, entire, ferruginous to fulvous: spores subglobose, smooth, ferruginous, 3–4 μ; cystidia tapering, acute, 40–60 × 6–8 μ.

TYPE LOCALITY: Nicaragua.
HABITAT: Dead trunks of trees.
DISTRIBUTION: Mexico and Nicaragua.

25. **Pyropolyporus subpectinatus** Murrill, sp. nov.

Pileus woody, thin, conchate, dimidiate to flabelliform, imbricate, laterally connate, often decurrent and effused behind, 2–4×4–8×0.3–0.5 cm.; surface conspicuously tomentose, repeatedly slightly sulcate, longitudinally furrowed at times, chestnut-brown, with a thin black crust beneath a heavy coating of tomentum; margin subacute, sterile, tomentose, ferruginous, undulate to lobed: context very thin, ferruginous to fulvous, 1–2 mm. thick; tubes indistinctly stratified, 1–2 mm. long each season, fulvous within, mouths circular, extremely minute, 9–10 to a mm., edges thin, entire, glistening, dark-melleous to ferruginous: spores globose, smooth, light-brown, 2 μ; cystidia none.

Type collected at Ciego de Avila, Cuba, on dead wood in a dense virgin forest, March 21, 1905, *F. S. Earle & W. A. Murrill 629.*
DISTRIBUTION: Mexico; Cuba; Jamaica.

26. **Pyropolyporus Langloisii** Murrill, Bull. Torrey Club **30**: 117. 1903.

A large thin expanded fungus with brown hymenium and a brown or blackish surface. Pileus corky, fan-shaped, attached by a narrow base, often depressed behind, 8–13 × 10–25 × 0.3–1.5 cm.; surface at first anoderm, soft, clothed with brown tomentum, many times concentrically sulcate, at length glabrous, rough, indurate, black, marked with numerous shallow furrows; margin velvety, brown, thin, acute, undulate or slightly lobed: context soft to corky, indurate in age, deep-brown, 0.2–0.3 cm. thick; tubes reviving, distinctly stratified, 0.2–0.5 cm. long each season, 8–9 to a mm., brown, mouths polygonal, concolorous, edges thin at maturity: spores globose, smooth, hyaline, 3 μ; cystidia none.

TYPE LOCALITY: Louisiana.
HABITAT: Base of the trunk of dead or dying hawthorn trees.
DISTRIBUTION: Louisiana.

27. **Pyropolyporus calcitratus** (Berk. & Curt.) Murrill.

Polyporus calcitratus Berk. & Curt. Jour. Linn. Soc. **10**: 314. 1868.

Pileus woody, dimidiate, applanate to compressed-ungulate, 4–10 × 6–12 × 1–3 cm.; surface tomentose, zonate, sulcate, umbrinous, becoming glabrous, darker and horny-encrusted with age; margin acute to subobtuse, sterile, ferruginous to fulvous: context woody, melleous to subferruginous with silky luster, 3–10 mm. thick; tubes distinctly stratified, often separated by thin layers of context, 4–6 mm. long each season, avellaneous within, mouths subcircular, minute, 7 to a mm., edges rather thin, melleous when young, becoming avellaneous: spores globose, smooth, brown, 7 μ; hyphae 8 μ; spines conical, ventricose, brown, scanty, 15–20 × 5–6 μ.

TYPE LOCALITY: Cuba.
HABITAT: On dead wood.
DISTRIBUTION: Cuba and Porto Rico.

28. **Pyropolyporus sarcitus** (Fries) Murrill.

Polyporus sarcitus Fries, Nov. Symb. 66. 1851.

Pileus woody, hard, thin, applanate, imbricate, narrowly attached, 8 × 14 × 0.7 cm.; surface slightly sulcate, umbrinous to fuliginous, fibrose-lacerate, subsquamose, becoming almost smooth, with black horny crust; margin subacute, umbrinous, hispid, undulate to lobed: context hard, ferruginous, 1–2 mm. thick, becoming fulvous and streaked with white in age; tubes indistinctly stratified, 1–2 mm. long each season, ferruginous within, walls circular, 5–6 to a mm., edges obtuse, entire, melleous to pale-fulvous: spores globose, smooth, very light-brown, 5 μ; hyphae 6 μ; cystidia none.

TYPE LOCALITY: Island of St. John, West Indies.
HABITAT: Dead wood.
DISTRIBUTION: Known only from the type locality.

29. **Pyropolyporus extensus** (Lév.) Murrill.

Polyporus extensus Lév. Ann. Sci. Nat. III. **5**: 129. 1846.
? *Ganoderma mexicanum* Pat. Bull. Soc. Myc. Fr. **14**: 54. 1898. (Type from Mexico.)

Pileus corky to woody, dimidiate to flabelliform, applanate, 10–20 × 15–30 × 1–3 cm.; surface velvety, thinly encrusted, rugose, zonate, sulcate, fulvous to castaneous, becoming dark and rimose with age; margin thin, acute to subobtuse, sterile, velvety, isabelline to fulvous, undulate to lobed: context corky to woody, yellow, slightly zonate, becoming darker, with dendroid markings, in age, 0.5–1 cm. thick; tubes evenly and distinctly stratified, 2–4 mm. long each season, fulvous, mouths circular, minute, 5 to a mm., edges obtuse, entire, ochraceous to fulvous: spores globose, smooth, fulvous, 4–5 μ; hyphae fulvous, 4 μ.

TYPE LOCALITY: Guadeloupe.
HABITAT: Decayed trunks.
DISTRIBUTION: Southern Florida; Mexico; Nicaragua; Cuba; Jamaica; Guadeloupe.

30. **Pyropolyporus sublinteus** Murrill, sp. nov.

Pileus corky to soft-woody, dimidiate, applanate, 6–8 × 7–10 × 1–2 cm.; surface finely tomentose to glabrous, very thinly encrusted, smooth, almost free from markings of any kind, light-bay to almost black; margin thin, rarely lobed, tomentose, ferruginous: context corky, slightly zonate, melleous, 3–10 mm. thick; tubes distinctly stratified, separated by layers of context, 2–6 mm. long each season, umbrinous within, mouths subcircular, 7 to a mm., edges thin, entire, becoming umbrinous: spores globose, smooth, brown, 5 μ; hyphae 8 μ; cystidia none.

Type collected at Topolobampo, Mexico, on decayed wood of mesquite, March, 1889, *Lulu Stanley & Ida Scully*.
DISTRIBUTION: Known only from the type locality.

31. **Pyropolyporus Haematoxyli** Murrill, Bull. Torrey Club **30**: 117. 1903.

A smooth applanate plant of considerable size with brownish tubes and honey-yellow context. Pileus woody, dimidiate, sessile, thickest behind, 12 × 14 × 4 cm.; surface glabrous, dark-brown, shallowly concentrically sulcate, marked with numerous darker concentric lines; margin fulvous, thin, rounded, slightly undulate: context corky to woody, indistinctly concentrically banded, honey-yellow, 1 cm. thick; tubes distinctly stratified, longer behind, 0.5–1 cm. long each season, 6 to a mm., dull-brown, mouths polygonal, concolorous, edges obtuse, becoming thin: spores globose, rarely ovoid, thin-walled, smooth, hyaline, 3.5–5 μ; hyphae ferruginous; cystidia none.

TYPE LOCALITY: Paradise, Jamaica.
HABITAT: Base of living logwood tree.
DISTRIBUTION: Known only from the type locality.

DOUBTFUL SPECIES

Polyporus rhabarbarinus Berk. Ann. Nat. Hist. **3**: 388. 1839. Type locality unknown. The only specimen in Hooker's herbarium that fits the description, according to Cooke, resembles *P. pseudosenex*, but has almost hyaline, globose spores, and small cuspidate cystidia.

Polyporus badius Berk. Ann. Nat. Hist. **7**: 453. 1841. Type from boreal North America. Very near *Pyropolyporus Everhartii*. Spores subglobose to ovoid, smooth, ferruginous, 4–5 × 6–7 μ; hyphae ferruginous, 4–5 μ; cystidia not found.

Polyporus elatus Lév. Ann. Sci. Nat. III. **5**: 129. 1846. Type from Guadeloupe. Description meager and authentic specimens not found.

Polyporus nicaraguensis Berk. & Curt. Proc. Am. Acad. **4**: 122. 1860. Type from Nicaragua. Description meager and authentic specimens not found.

Polyporus subflexibilis Berk. & Curt. Jour. Linn. Soc. **10**: 311. 1868. Described from Wright's Cuban collections.

Polyporus sclerodes Berk. & Curt. Jour. Linn. Soc. **10**: 311. 1868. Type from Cuba. Although the description is fairly complete, it is impossible to locate the species without seeing the type material, which could not be found at Kew.

Polyporus scleromyces Berk. & Curt. Jour. Linn. Soc. **10**: 312. 1868. Collected by Wright on dead wood in Cuba. Specimens at Kew hardly accord with the description.

Xanthochrous igniarioides Pat. Bull. Soc. Myc. Fr. **14**: 54. 1898. Type from Mexico. Authentic specimens not seen. Said to differ from *Pyropolyporus Everhartii* in having larger spores and no cystidia.

68. **PORODAEDALEA** Murrill, Bull. Torrey Club **32**: 367. 1905.

Hymenophore large, perennial, epixylous, sessile, conchate to ungulate; surface anoderm, sulcate, usually rough: context brown and woody; tubes concolorous, rarely in distinct layers, the hymenium varying from porose to daedaleoid: spores smooth, hyaline at maturity, becoming brownish with age; cystidia conspicuous.

Type species, *Boletus Pini* Thore.

1. **Porodaedalea Pini** (Thore) Murrill, Bull. Torrey Club **32**: 367. 1905.

Boletus Pini Thore, Chlor. Land. 487. 1803.—Brot. Fl. Lusit. **2**: 468. 1804.
Daedalea Pini Fries, Syst. Myc. **1**: 336. 1821.—Linnaea **5**: 514. 1830.
Polyporus Pini Pers. Myc. Eur. **2**: 83. 1825.
Trametes Pini Fries, Epicr. Myc. 489. 1838.
Fomes Abietis Karst. Bidr. Finl. Nat. Folk **37**: 242. 1882.
Polyporus piceinus Peck, Ann. Rep. N. Y. State Mus. **42**: 25. 1889. (Type from Sandlake, New York.)
Trametes Pini Abietis Karst. Finl. Basidsv. 336. 1889.
? *Trametes gausapata* Berk. & Rav. Grevillea **19**: 102. 1891. (Type from South Carolina.)

Pileus hard, woody, typically ungulate, conchate or effused-reflexed in varieties, often imbricate, 5–8 × 7–12 × 5–8 cm., smaller in varieties; surface very rough, deeply sulcate,

tomentose, tawny-brown, becoming rimose and almost black with age; margin rounded or acute, tomentose, ferruginous to tawny-cinnamon, entire, sterile in large specimens: context soft-corky to indurate, homogeneous, ferruginous, 5–10 mm. thick, thinner in small specimens; tubes stratified, white to avellaneous within, becoming ferruginous at maturity and in the older layers, 5 mm. long each season, much shorter in thin specimens, mouths irregular, circular or daedaleoid, often radially elongate, averaging 1 to a mm., edges ferruginous to grayish-umbrinous, glistening when young, rather thin, entire; spores subglobose, smooth, hyaline at maturity, becoming brownish with age, 5–6 × 3–4 μ; spines abundant, short, 25–35 × 4–6 μ.

TYPE LOCALITY: France.
HABITAT: Trunks of living conifers.
DISTRIBUTION: Temperate regions.
ILLUSTRATIONS: Bull. U. S. Dep. Agr. Veg. Phys. 25: *pl. 12*; E. & P. Nat. Pfl. 1[1]**: *f. 95*.
EXSICCATI: Ellis & Ev. N. Am. Fungi *2507*, *2730*; Romell, Fungi Scand. *7*; Zopf & Sydow, Myc. Mar. *3*; Ellis, N. Am. Fungi *602*; Rab.-Wint. Fungi Eur. *3138*; Karst. Finl. Fungi *7*; Ellis & Ev. Fungi Columb. *1205*; Linhart, Fungi Hung. *348*; Krieger, Schädl. Pilz. *78*.

69. **NIGROFOMES** Murrill, Bull. Torrey Club **31**: 425. 1904.

Hymenophore large, perennial, epixylous, sessile: context woody, purple; tubes cylindrical, stratose, thick-walled, black: spores ovoid, smooth, hyaline.

Type species, *Polyporus melanoporus* Mont.

1. **Nigrofomes melanoporus** (Mont.) Murrill, Bull. Torrey Club **31**: 425. 1904.

Polyporus melanoporus Mont. Pl. Cell. Cuba 422. 1842.
Fomes melanoporoides Cesati, Myc. Borneo 5. 1879. (Type from Borneo.)
Fomes Cornu-bovis Cooke, Grevillea **13**: 2. 1884. (Type from Malaya.)

Pileus very hard, ligneous, heavy, conchate to applanate, sessile, dimidiate, decurrent, 6–10 × 10–15 × 1–2 cm. surface tomentose, nearly smooth, fuliginous to black, becoming glabrous, shining, several times sulcate and often rough and tuberculose with age; margin usually deflexed at least when dry, sterile, rounded, rarely acute, finely tomentose, castaneous-umbrinous, becoming bay when bruised: context hard, fibrous, zonate, lustrous, dark reddish-violet to chestnut-colored, 5 mm. thick, much thinner in old specimens; tubes distinctly stratified, 3–4 mm. long each season, blackish to black the first year, avellaneous in the older layers, mouths circular, minute, 5–6 to a mm., edges thick, entire, umbrinous, becoming angular, thin and dark smoky-black with age: spores ovoid, smooth, hyaline.

TYPE LOCALITY: Cuba.
HABITAT: Trunks of trees.
DISTRIBUTION: Southern Florida; Nicaragua; Cuba; Jamaica; also in tropical Asia.

70. **GLOBIFOMES** Murrill, Bull. Torrey Club **31**: 424. 1904.

Hymenophore large, woody, encrusted, perennial, epixylous, compound: context ferruginous, punky; tubes cylindrical, thick-walled, stratose: spores ovoid, smooth, ferruginous.

Type species, *Boletus graveolens* Schw.

1. **Globifomes graveolens** (Schw.) Murrill, Bull. Torrey Club **31**: 424. 1904.

Boletus graveolens Schw. Schr. Nat. Ges. Leipzig **1**: 97. 1822.
Polyporus conglobatus Berk. Lond. Jour. Bot. **4**: 303. 1845. (Type from Ohio.)
Fomes graveolens Cooke, Grevillea **13**: 118. 1884.

Hymenophore polycephalous, globose, having the appearance of being thatched, 8–15 cm. in diameter, the center homogeneous, ferruginous, floccose and rigid: pilei very numerous, cespitose-branched, closely imbricate, occupying the periphery of the mass. Pileus corky, rigid, conchate, usually plicate, 1–3 × 0.5–0.8 cm.; surface radiately sulcate, slightly zonate, purplish-fuscous, pulverulent to glabrous, slightly resinous in appearance,

encrusted, grayish-black with age; margin fulvous, pulverulent, undulate or lobed, subacute, deflexed, sterile on the perpendicular portion, which is from 2 to 3 mm. long: context floccose, homogeneous, ferruginous, 2–5 mm. thick, with a strong and disagreeable odor when fresh; tubes 2 mm. long, grayish-umbrinous, mouths circular, whitish-pulverulent to castaneous, fuliginous with age, edges thick, entire: spores globose or ovoid, smooth, ferruginous, 4 μ; hyphae dark-brown, 6 μ; cystidia ovoid, hyaline, rather abundant, $7 \times 4\ \mu$.

TYPE LOCALITY: Georgia.
HABITAT: Dead trunks of oak and beech.
DISTRIBUTION: Pennsylvania to Iowa and Georgia.
ILLUSTRATION: Ohio Myc. Bull. **9**: *f. 41.*
EXSICCATI: Rav. Fungi Car. **3**: *8;* Ellis & Ev. N. Am. Fungi *603.*

71. **ELFVINGIA** Karst. Finl. Basidsv. 333. 1889.

? *Xylopilus* Karst. Bidr. Finl. Nat. Folk **37**: 69. 1882.

Hymenophore large, epixylous, sessile, applanate or ungulate; surface sulcate, horny-encrusted: context brown, punky; tubes brown, cylindrical, stratose, thick-walled, mouths whitish when young: spores brown, rarely hyaline; conidia present in most species on or near the surface of the pileus.

Type species, *Fomes applanatus* (Pers.) Gill.

Context ferruginous; spores hyaline; pileus usually ungulate.
  Pileus exactly ungulate; pores 3 to a mm.; found in temperate regions south to North Carolina. 1. *E. fomentaria.*
  Pileus compressed-ungulate; pores 5 to a mm.; found in tropical America and the Gulf states. 2. *E. fasciata.*
Context darker, fulvous to chocolate-brown; spores yellowish-brown; pileus usually applanate.
  Hymenophore annual, persisting above later growths; pileus reniform, margin thin; spores dark-brown, roughly echinulate, $8–9 \times 7\ \mu$. 3. *E. lobata.*
  Hymenophore truly perennial; tubes stratified; spores smooth or nearly so.
    Crust white, becoming brown, not separating; spores smooth, $8–9 \times 5\mu$; found in temperate regions. 4. *E. megaloma.*
    Crust brown; context floccose, softer; spores smooth or slightly echinulate; found in tropical America.
      Pileus thick at maturity, crust smooth and very hard; hymenium plane; margin truncate, very smooth, often laccate. 5. *E. tornata.*
      Pileus thin, crust radially wrinkled, thinner; hymenium concave; margin undulate, never laccate. 6. *E. Lionnetii.*

1. **Elfvingia fomentaria** (L.) Murrill, Bull. Torrey Club **30**: 298. 1903.

Boletus fomentarius L. Sp. Pl. 1176. 1753.
Polyporus fomentarius Fries, Syst. Myc. 1: 374. 1821.
Polyporus fomentarius excavatus Berk. Ann. Nat. Hist. **3**: 387. 1839. (Type from Isle à la Crosse, North America.)
Fomes fomentarius Gill. Champ. Fr. 1: 686. 1878.

Pileus hard, woody, ungulate, concave below, $7–9 \times 8–10 \times 3–10$ cm.; surface finely tomentose to glabrous, isabelline to avellaneous and finally black and shining with age, zonate, sulcate, horny-encrusted; margin obtuse, velvety, isabelline to fulvous: context punky, homogeneous, ferruginous to fulvous, conidia-bearing, 3–5 mm. thick; tubes indistinctly stratified, not separated by layers of context, 3–5 mm. long each season, avellaneous to umbrinous within, mouths circular, whitish-stuffed when young, 3–4 to a mm., edges obtuse, entire, grayish-white to avellaneous, turning dark when bruised: spores globose, smooth, very light-brown, 3–4 μ; hyphae brown, 7–8 μ; cystidia none.

TYPE LOCALITY: Sweden.
HABITAT: Abundant on trunks of birch and beech.
DISTRIBUTION: Canada to North Carolina and west to California; also in the temperate regions of Europe.
ILLUSTRATIONS: Gill. Champ. Fr. *pl. 467;* Sow. Engl. Fungi *pl. 133.*
EXSICCATI: Sydow, Myc. Mar. *210, 4608;* Allesch. & Schn. Fungi Bavar. *140;* Linhart, Fungi Hung. *251;* Thüm. Fungi Austr. *716;* Eriksson, Fungi Par. Scand. *77;* Krieger, Fungi Sax. *721;* Shear, N. Y. Fungi *35;* Thüm. Myc. Univ. *2109.*

2. **Elfvingia fasciata** (Sw.) Murrill, Bull. Torrey Club **30**: 298. 1903.

Boletus fasciatus Sw. Prodr. 149. 1788.
Polyporus sclerodermeus Lév. Ann. Sci. Nat. III. **5**: 129. 1846. (Type from Guadeloupe.)
Polyporus marmoratus Berk. & Curt. Proc. Am. Acad. **4**: 122. 1858. (Type from Nicaragua.)
Fomes subfomentarius Romell, Bih. Sv. Vet.-Akad. Handl. **26** (3)[16]: 19. 1901. (Type from Matto Grosso, Brazil.)
Myriadoporus Dussii Pat. Bull. Soc. Myc. Fr. **5**: 85. 1889. (Type from Martinique.)

Pileus hard, woody, dimidiate, applanate to ungulate, convex above, 7–10 × 8–15 × 2–6 cm.; surface finely tomentose, at length glabrous, concentrically sulcate, at first mole-colored, changing to umbrinous, and finally avellaneous with black fasciations; margin acute to obtuse, isabelline, sterile, undulate or entire: context punky, thin, ferruginous to fulvous, zonate, 3–5 mm. thick; tubes indistinctly stratified, 5–10 mm. long each season, avellaneous within, mouths circular, minute, 4–5 to a mm., edges obtuse, avellaneous to umbrinous, becoming darker when bruised: spores subglobose, smooth, light-brown, 5–7 μ; hyphae brown, 4–6 μ; cystidia none.

TYPE LOCALITY: Jamaica.
HABITAT: Dead trunks of various trees.
DISTRIBUTION: Gulf states and tropical America.
ILLUSTRATION: Romell, *loc. cit. pl. 1, f. 27; pl. 2, f. 35, 36.*
EXSICCATI: Ellis & Ev. N. Am. Fungi *1702.*

3. **Elfvingia lobata** (Schw.) Murrill.

Polyporus lobatus Schw. Trans. Am. Phil. Soc. II. **4**: 157. 1832.
Polyporus reniformis Morgan, Jour. Cinc. Soc. Nat. Hist. **8**: 103. 1885. (Type from Ohio.)
Elfvingia reniformis Murrill, Bull. Torrey Club **30**: 299. 1903.

Pileus woody, applanate, reniform to dimidiate, 5–8 × 10–15 × 1–2.5 cm.; surface concentrically sulcate, subzonate, glabrous, ferruginous to fulvous, becoming grayish-brown with age; margin thin, rarely rounded, creamy-white, smooth, entire: context punky with some horny fibers, chestnut-colored, slightly zonate, 5–8 mm. thick; tubes annual, 5–8 mm. long each season, avellaneous within, mouths circular, 4–5 to a mm., edges obtuse, entire, cremeous to umbrinous, becoming brownish when bruised: spores ovoid, dark-brown, asperulate, 8–10 × 6–7 μ; hyphae fulvous, 3–5 μ in diameter.

TYPE LOCALITY: Salem, North Carolina.
HABITAT: Stumps and diseased trunks of certain deciduous trees, especially the white oak.
DISTRIBUTION: New York to Alabama and west to Missouri.

4. **Elfvingia megaloma** (Lév.) Murrill, Bull. Torrey Club **30**: 300. 1903.

Polyporus megaloma Lév. Ann. Sci. Nat. III. **5**: 128. 1846.
Polyporus leucophaeus Mont. Syll. Crypt. 157. 1856. (Type from Ohio.)
Fomes megaloma Cooke, Grevillea **14**: 18. 1885.

Pileus hard, woody, dimidiate, applanate, 6–15 × 8–30 × 1–4 cm.; surface milk-white to gray or umbrinous, glabrous, concentrically sulcate, encrusted, fasciate with obscure lines, conidia-bearing, usually brownish during the growing season from the covering of conidia; margin obtuse, broadly sterile, white or slightly cremeous, entire to undulate: context corky, usually rather hard, zonate, fulvous to bay, 5–10 mm. thick, thinner with age; tubes very evenly stratified, separated by thin layers of context, 5–10 mm. long each season, avellaneous to umbrinous within, mouths circular, 5 to a mm., whitish-stuffed when young, edges obtuse, entire, white or slightly yellowish to umbrinous, quickly changing color when bruised: spores ovoid, smooth or very slightly roughened, pale yellowish-brown, truncate at the base, 7–8 × 5–6 μ.

TYPE LOCALITY: New York.
HABITAT: Abundant on dead or diseased trunks or timber of most deciduous trees; also on conifers in certain sections.
DISTRIBUTION: Canada to the mountains of Alabama and west to California.
EXSICCATI: Thüm. Myc. Univ. *1804;* Rab.-Wint. Fungi Eur. *3736;* Ellis, N. Am. Fungi *801;* Shear, N. Y. Fungi *34.*

5. **Elfvingia tornata** (Pers.) Murrill, Bull. Torrey Club **30**: 301. 1903.

Polyporus tornatus Pers.; Gaud. Voy. Freyc. Bot. 173. 1826.
Polyporus australis Fries, Elench. Fung. 108. 1828. (Type from islands in the Pacific Ocean.)
Polyporus Oerstedii Fries, Nov. Symb. 63. 1851. (Type from the island of St. John, West Indies.)
Fomes australis Cooke, Grevillea **14**: 18. 1885.
Ganoderma australe Pat. Bull. Soc. Myc. Fr. **5**: 71. 1889.

Pileus hard, woody, dimidiate, sessile or spuriously stipitate, applanate, thin, very large, plane below, 10–20 × 15–30 × 1–5 cm.; surface horny-encrusted, sulcate, glabrous, slightly tuberculose, conidia-bearing, opaque to subshining, often fasciate with black bands, subspadiceous to fulvous; margin smooth, sterile, often laccate, subacute, often becoming truncate: context floccose with harder fibers, zonate, fulvous to bay, with whitish markings in old specimens, 5–10 mm. thick, very thin in large specimens; tubes indistinctly stratified, 5–8 mm. long each season, not separated by layers of context, dark-umbrinous within, mouths circular, not stuffed when young, often covered near the margin with resin, 4 to a mm., edges obtuse to acute, entire, pallid to umbrinous: spores broadly ellipsoid, truncate, very dark yellowish-brown, abundantly and roughly echinulate, 5–6 × 7–8 μ.

TYPE LOCALITY: Islands in the Pacific ocean.
HABITAT: Dead trunks and stumps of various trees.
DISTRIBUTION: Abundant and widely distributed in tropical America; also in tropical Asia.

6. **Elfvingia Lionnetii** (Rolland) Murrill, Bull. Torrey Club **30**: 301. 1903.

Ganoderma Lionnetii Rolland, Bull. Soc. Myc. Fr. **17**: 180. 1901.

Pileus woody, thin, applanate, 8–12 × 15–20 × 1–3 cm.; surface horny-encrusted, profoundly radiate-rugose, zonate-fasciate, tuberculose, spadiceous-umbrinous to fuliginous; margin pallid, sterile, undulate, obtuse, reddish-brown when bruised: context floccose, hard, tawny-bay, 3–5 mm. thick; tubes indistinctly stratified, 6–10 mm. long each season, not separated by layers of context, chestnut-colored within, umbrinous-tinted, especially in the older layers, mouths circular to polygonal, whitish-stuffed when young, 4–5 to a mm., edges obtuse, very thin, denticulate, white or cream-colored to umbrinous or bay, chestnut-colored when bruised: spores ovoid, smooth, fulvous, truncate at the base, 8 × 5 μ.

TYPE LOCALITY: Isthmus of Panama.
HABITAT: Trunks of trees.
DISTRIBUTION: Nicaragua and Panama.
ILLUSTRATION: Bull. Soc. Myc. Fr. **17**: *pl. 8*.

72. **AMAURODERMA** Murrill, Bull. Torrey Club **32**: 366. 1905.

Hymenophore large, epixylous, stipitate, the stipe often much elongated; surface smooth, encrusted, not varnished: context pallid or brown, punky to fibrous; tubes cylindrical, concolorous, the mouths usually light-colored at first: spores ovoid or globose, brown.

Type species, *Fomes regulicolor* Cooke.

Pileus over 3 cm. broad; stipe over 5 mm. thick.
  Stipe lateral, ascending.
    Stipe less than 5 cm. long.
      Pileus 10 cm. or more broad; tubes 5 to a mm.; plants cespitose. 1. *A. coffeatum.*
      Pileus 5 cm. or less broad; tubes 8 to a mm.; plants simple. 2. *A. regulicolor.*
    Stipe 15 cm. long. 3. *A. avellaneum.*
  Stipe central, erect.
    Hymenium white to avellaneous; stipe 15 cm. long. 4. *A. Chaperi.*
    Hymenium rich yellow; stipe less than 10 cm. long. 5. *A. flaviporum.*
Pileus 3 cm. or less in breadth; stipe slender, less than 5 mm. thick.
  Context bay. 6. *A. renatum.*
  Context white to avellaneous.
    Stipe 2 cm. long; pileus orbicular, nodding. 7. *A. nutans.*
    Stipe 10 cm. long; pileus reniform, erect. 8. *A. subrenatum.*

1. **Amauroderma coffeatum** (Berk.) Murrill, Bull. Torrey Club 32 : 367. 1905.

Polyporus coffeatus Berk. Ann. Nat. Hist. 3 : 385. 1839.

Cespitose; pileus solid, corky, suborbicular, oblique, 18–20 cm. broad; surface smooth, thinly encrusted, opaque, reddish-brown; margin pallid to brown, obtuse: context corky, pallid, pale-isabelline in dried specimens; tubes decurrent, pallid, mouths subcircular, 5 to a mm., darker than the context, edges obtuse, entire: spores not examined: stipe laterally attached, elongate, cylindrical, subequal, obscure-brown, mixed with coffee color, pruinose, pallid and soft-corky, becoming fistulose, 3.5 cm. long, 1 cm. thick.

TYPE LOCALITY: St. Vincent, West Indies.
HABITAT: Decaying trunks.
DISTRIBUTION: Known only from the type locality.

2. **Amauroderma regulicolor** (Cooke) Murrill, Bull. Torrey Club 32 : 367. 1905.

Fomes regulicolor Cooke, Grevillea 15 : 21. 1886.

Pileus simple, rigid, corky, reniform, convex above, 2 × 2.5–4 × 0.3–1 cm.; surface silky, subzonate, smooth, purplish-fuscous; margin subacute, more obscure: context fulvous, punky, homogeneous, 1–3 mm. thick; tubes not stratified, 3–5 mm. long, grayish-umbrinous within, mouths hexagonal at maturity, 8 to a mm., grayish-fuscous, lighter when young, edges thin, entire: spores not examined: stipe lateral, ascending, contorted, fuscous, slightly tomentose, opaque, 4–8 cm. long, 8–12 mm. thick.

TYPE LOCALITY: Cuba.
HABITAT: Decaying roots of deciduous trees.
DISTRIBUTION: Cuba.

3. **Amauroderma avellaneum** Murrill, sp. nov.

Pileus woody, rather thick, flabelliform, laterally attached, 6 × 6 × 1 cm.; surface pulverulent to glabrous, very rugose, colliculose behind, slightly sulcate, thinly encrusted, opaque, avellaneous with faint reddish-brown zones; margin pallid, acute, lobed, pulverulent: context corky with horny radiations, pale-isabelline when dry, 3–4 mm. thick; hymenium free; tubes long and slender, not stratified, 1 cm. long behind, shorter in front, white within, mouths circular, 4 to a mm., edges obtuse, entire, white: stipe long, ascending, subcylindrical with several short aborted branches, straight, laterally attached, umbrinous, opaque, horny-encrusted, firm and nearly white within, 15 cm. long, 1 cm. thick.

Type collected in Nicaragua, on decayed wood, *C. L. Smith*.
DISTRIBUTION: Known only from the type locality.

4. **Amauroderma Chaperi** (Pat.) Murrill, Bull. Torrey Club 32 : 367. 1905.

Ganoderma Chaperi Pat. Jour. de Bot. 4 : 197. 1890.

Pileus rigid, corky to woody, regularly orbicular, plane, slightly depressed at the center, 8 × 8 × 1.5 cm.; surface opaque, brownish-black, fulvous-fasciate, abundantly shallowly concentrically sulcate, with fragile crust; margin plicate-rugulose, obtuse, fertile, pallid: context punky, pale-fulvous, homogeneous, 4–5 mm. thick; hymenium free; tubes not stratified, avellaneous-isabelline, 8–12 mm. long, mouths circular or angular, regular, minute, 4–5 to a mm., edges thick, entire, avellaneous: spores exactly spherical, fulvous, echinulate: stipe central, cylindrical, equal, very long, probably rooting, opaque, brownish-cinereous, pale-fulvous and stuffed within, 15 cm. long, 8 mm. thick.

TYPE LOCALITY: Cuba.
HABITAT: Dead wood.
DISTRIBUTION: Known only from the type locality.

5. **Amauroderma flaviporum** Murrill, sp. nov.

Pileus hard, rigid, circular, depressed at the center, concave below, 8–12 × 8–12 × 1 cm.; surface opaque, velvety, umbrinous with numerous bay-black zones, radiate-rugose,

not sulcate; margin paler, velvety, subzonate, deflexed, at least when dry, acute, undulate to lobed: context white, corky, homogeneous, 5 mm. thick; hymenium adnate; tubes very pale avellaneous, not stratified, 2–4 mm. long, mouths angular, 4–5 to a mm., stuffed when young, edges thin, entire, flavous when fresh, cremeous-melleous in dried specimens: spores ovoid, truncate, yellowish-brown, roughly echinulate, 6–7 × 4–5 μ: stipe thick, central, slightly flattened, equal or expanding above, erect, opaque, horny-encrusted, velvety, dark melleous-luteous, white and punky within, 6–8 cm. long, 1.5–2 cm. thick.

Type collected at Hope mine, Jamaica, on *Melicocca bijuga*, October 25, 1902, *F. S. Earle 105*.
DISTRIBUTION: Known only from the type locality.

6. **Amauroderma renatum** (Berk.) Murrill.

Polyporus renatus Berk. Jour. Bot. & Kew Misc. 8: 170. 1856.

Pileus lateral, very thin, rigid when dry, fan-shaped to reniform, attenuate behind, 1–2 × 1.5–3 × 0.1–0.2 cm.; surface silky, zonate, slightly rugose, castaneous, becoming glabrous and avellaneous-isabelline with age; margin very thin, pallid, entire to undulate or lobed: context punky, bay, homogeneous, 0.5–1 mm. thick; tubes not stratified, though apparently reviving, 1–1.5 mm. long, murinous to umbrinous within, mouths hexagonal, pure white at first, becoming umbrinous with age, 5 to a mm., edges at first very thick, becoming thinner, entire: stipe very long, erect or somewhat flexuose, laterally attached, slightly expanding above, frequently branched either near the middle or at the apex, avellaneous to umbrinous, opaque, finely tomentose, fulvous and floccose within, 10–20 cm. long, 1–3 mm. thick.

TYPE LOCALITY: Panuré, Brazil.
HABITAT: On the ground, usually attached to buried decaying wood.
DISTRIBUTION: Nicaragua; Jamaica; also in Brazil.

7. **Amauroderma nutans** (Fries) Murrill.

Polyporus nutans Fries, Nov. Symb. 61. 1851.
Ganoderma nutans Pat. Bull. Soc. Myc. Fr. **5**: 68. 1889.

A small plant with slender recurved stipe, having the habit of *Hydnum auriscalpium*. Pileus corky, orbicular, convex above, concave below, 2 × 2 × 0.3–0.5 cm.; surface smooth, pallid to bay-black, dull-avellaneous in type specimens, abruptly sulcate, radiate-rugose; margin thin, acute, pallid, entire, sterile: context floccose, becoming indurate, very thin, white to avellaneous, scarcely a mm. thick; tubes annual, 2–3 mm. long, pallid to avellaneous within, young and but partially developed in type specimens, mouths angular, minute, 8–9 to a mm., pallid to avellaneous, edges thin, entire: spores not examined: stipe lateral, umbonate-affixed, long, slender, flexuose, twisted as though twining, recurved at the apex, pallid to chestnut, encrusted, dull-avellaneous in type specimens, 2 × 0.4–0.8 cm.

TYPE LOCALITY: San José, Costa Rica.
HABITAT: Dead trunks.
DISTRIBUTION: Known only from the type locality.
ILLUSTRATION: E. & P. Nat. Pfl. 1[1]**: *f. 88 c.*

8. **Amauroderma subrenatum** Murrill, sp. nov.

Pileus lateral, reniform, convex above, concave below, rigid when dry, 2 × 3 × 0.2 cm.; surface glabrous, rugose, slightly zonate, abruptly shallowly concentrically sulcate, avellaneous to umbrinous, depressed behind; margin finely tomentose, zonate, pallid, rather thick: context white, thin, fibrous, 1 mm. thick; tubes not stratified, pale-isabelline when dry, 1–1.5 mm. long, mouths circular to hexagonal, regular, 4–5 to a mm., edges thick, entire, pale-avellaneous: stipe long, slender, slightly flexuose at the base, erect above, cylindrical, equal, laterally attached, simple, umbrinous, opaque, firm and white within, 10 cm. long, 2 mm. thick.

Type collected in British Honduras, on the ground, in 1906, *Morton E. Peck.*
DISTRIBUTION: Known only from the type locality.

DOUBTFUL SPECIES

Ganoderma guadelupense Pat. Bull. Soc. Myc. Fr. **15**: 198. 1899. Collected by Duss in Guadeloupe, on dead trunks of various trees. Pileus 6–10 cm. broad; stipe 4–8 cm. long. According to Bresadola, this species is not different from *Ganoderma intermedium* Bres. & Pat.

73. **GANODERMA** Karst. Rev. Myc. 3^9: 17. 1881.

Placodes Quél. Ench. Fung. 170. 1886.

Hymenophore large, sessile or stipitate, perennial or annual, epixylous; surface sulcate, covered with reddish-brown varnish: context punky, brown or pallid; tubes cylindrical, concolorous: spores ovoid, brown.

Type species, *Fomes lucidus* Leys.

Species confined to temperate regions.
- Species found on conifers: context white or nearly so, except near the tubes.
  - Sporophore stipitate.
    - Found on *Tsuga canadensis* throughout its range. — 1. *G. Tsugae.*
    - Found on *Picea sitkensis* in Oregon. — 2. *G. oregonense.*
  - Sporophore sessile.
    - Found on *Sequoia gigantea* in California; crust of pileus remaining unbroken. — 3. *G. Sequoiae.*
    - Found on *Picea* in Nevada; crust of pileus soon rimose and falling away in flakes. — 4. *G. nevadense.*
- Species found on deciduous trees and palms: context light- to dark-brown.
  - Context ochraceous to isabelline above, tawny next to the tubes.
    - Sporophore sessile, pores large, usually 2 to a mm., greenish-gray when young; species found in California and Arizona. — 5. *G. polychromum.*
    - Sporophore stipitate, often sessile, pores half as large; species found east of the Rocky Mountains.
      - Sporophore perennial; margin of pileus truncate at maturity. — 6. *G. Curtisii.*
      - Sporophore annual; margin of pileus acute. — 7. *G. sessile.*
  - Context dark-bay throughout; sporophore sessile; species confined to the southeastern United States.
    - Pileus zonate, even; tubes not stratified. — 8. *G. zonatum.*
    - Pileus sulcate, azonate; tubes stratified. — 9. *G. sulcatum.*

Species confined to the tropics.
- Sporophore stipitate, rarely varying to sessile.
  - Stipe very long and slender, 10–15 cm. — 10. *G. praelongum.*
  - Stipe short to medium.
    - Surface of pileus narrowly multizonate.
      - Pileus and stipe chestnut-colored: context isabelline. — 11. *G. perzonatum.*
      - Pileus and stipe almost black: context dark-fulvous. — 12. *G. subfornicatum.*
    - Surface of pileus not narrowly multizonate, although more or less sulcate.
      - Pileus very large, 20–50 cm. broad. — 13. *G. pulverulentum.*
      - Pileus of medium size, not exceeding 10 cm. in breadth.
        - Context soon indurate, very hard, margin of pileus usually lobed. — 14. *G. stipitatum.*
        - Context soft and punky, margin not lobed.
          - Surface shining, yellowish-red to bay or dark-brown; tubes 3–5 mm. long. — 15. *G. subincrustatum.*
          - Surface not shining, avellaneous to dull-castaneous; tubes 5–10 mm. long. — 16. *G. argillaceum.*
- Sporophore sessile, never truly stipitate.
  - Pileus small, less than 3 cm. broad. — 17. *G. parvulum.*
  - Pileus medium to large, 8–30 cm. broad.
    - Surface scaly and glistening like mica from the excess of resin; hymenium white when young. — 18. *G. nitidum.*
    - Surface normally laccate, tuberculose; hymenium cream-colored when young. — 19. *G. tuberculosum.*

1. **Ganoderma Tsugae** Murrill, Bull. Torrey Club **29**: 601. 1902.

A conspicuous reddish-chestnut fungus growing on dead or dying hemlock. Pileus corky to woody, fan-shaped, convex above, concave below, 4–20 × 5–25 × 1–4 cm.; surface glabrous, uneven, concentrically sulcate, laccate, lustrous, yellowish-red to mahogany-colored, at length black; margin light-yellow, acute, becoming concolorous, truncate, and marked with many shallow furrows, often undulate and at times more or less lobed: context soft-corky, radiate-fibrous, white or nearly so, 1–3 cm. thick; tubes annual, 0.5–0.75

cm. long, 4–6 to a mm., brown within, mouths circular or polygonal, white to light-cinnamon, edges obtuse, becoming acute: spores ovoid, obtuse at the summit, attenuate and truncate at the base, verrucose, yellowish-brown, 9–11 × 6–8 μ: stipe lateral, ascending, frequently forked, cylindrical, equal, 2–20 × 1–4 cm., resembling the pileus in color, surface and context.

TYPE LOCALITY: New York City.
HABITAT: On decaying trunks, stumps and roots of *Tsuga canadensis*.
DISTRIBUTION: Nova Scotia to Virginia and west to Minnesota.
ILLUSTRATION: Atk. Mushrooms *pl. 66*. 1900.

2. **Ganoderma oregonense** Murrill, sp. nov.

Pileus reniform, corky, rigid, convex above, plane below, 10 × 17 × 5 cm.; surface glabrous, thinly encrusted, smooth, laccate, very lustrous, bay to black, with a deep groove near the margin, which is cream-colored, rounded, smooth, entire, finely tomentose: context punky, white to slightly discolored, homogeneous, with white lines of mycelium near the stipe, 2–3.5 cm. thick; tubes annual, 1 cm. long, avellaneous within, mouths circular to angular, 3 to a mm., edges thin, entire, white to avellaneous: stipe lateral, very thick, short, subcylindrical, 2–4 cm. long, 3–6 cm. thick, expanding into the pileus, which it resembles in color, surface and context.

Type collected near Seaside, Oregon, on an old log of *Picea sitchensis*, during the summer of 1905, by an unknown collector.
DISTRIBUTION: Known only from the type locality.

3. **Ganoderma Sequoiae** Murrill, sp. nov.

Pileus soft, tough, dimidiate, compressed-ungulate, subimbricate, convex above, concave below, 8 × 14 × 5 cm.; surface at length glabrous, laccate, thinly encrusted, very uneven, undulate, concentrically sulcate near the margin, shining bay to nearly black; margin ochraceous, smooth, undulate, subacute: context punky, homogeneous, cremeous above, fulvous immediately adjoining the tubes, 2 cm. thick behind; tubes indistinctly stratified, 5–20 mm. long, grayish-fuscous to fulvous within, mouths circular to angular, rather large, irregular, 1–2 to a mm., edges thin, entire, cremeous to umbrinous, chestnut-colored when bruised.

Type collected at Sequoia cañon, California, on a redwood trunk, December 28, 1902, *Alice Eastwood 40*.
DISTRIBUTION: Known only from the type locality.

4. **Ganoderma nevadense** Murrill, sp. nov.

Pileus soft-corky, very large, thin, applanate, dimidiate, 15–20 × 30–40 × 3–5 cm.; surface bay to black, sublustrous, laccate, thinly encrusted, the crust becoming cracked and falling off in flakes, leaving a glistening white membrane; margin nearly white, thin: context punky, homogeneous, white to straw-colored, subfulvous next to the tubes, 1–2.5 cm. thick; tubes perennial, 5–15 mm. long each season, fulvous within, mouths circular to angular, 2 to a mm., edges thin, becoming lacerate, white to fulvous.

Type collected at Marlette Lake, Nevada, on a dead spruce trunk, August 15, 1902, *C. F. Baker 1489*.
DISTRIBUTION: Known only from the type locality.

5. **Ganoderma polychromum** (Copel.) Murrill.

Polyporus polychromus Copel. Ann. Myc. **2**: 507. 1904.

Sporophore solitary or superimposed; pileus reniform, soft, 4 × 6 × 1–2 cm.; surface glabrous, thinly encrusted, azonate, uneven, laccate, sublustrous, fulvous to bay; margin obtuse, cremeous, sterile, uneven: context fulvous, darker below, homogeneous, punky, slightly zonate, 1 cm. thick; tubes annual, 5–10 mm. long, avellaneous within, mouths large, angular, irregular, 2–4 to a mm., edges thin, uneven, greenish-white to grayish-fuscous: spores obovate, subfuscous, 7–10 μ.

TYPE LOCALITY: Searsville, California.
HABITAT: Decayed trunks of *Quercus* and *Salix*.
DISTRIBUTION: California and Nevada.

6. **Ganoderma Curtisii** (Berk.) Murrill.

Polyporus Curtisii Berk. Hook. Jour. Bot. 1 : 101. 1849.

Pileus corky to woody, reniform, convex above, concave below, 5–10 × 8–15 × 1–2 cm.; surface glabrous, ochraceous to latericeous or bay, at first laccate, the varnish soon disappearing, broadly sulcate; margin obtuse to truncate, sulcate, ochraceous, entire, glabrous: context soft-corky, zonate, ochraceous above, fulvous below, 5 mm. thick; tubes perennial, indistinctly stratified, 5–8 mm. long each season, avellaneous-umbrinous within, mouths circular to slightly angular, 3–5 to a mm., edges entire, white or cremeous, becoming umbrinous: spores ovoid, attenuate and truncate at the base, yellowish-brown, verrucose, 9–11 × 5–6 μ: stipe usually excentric or lateral, erect or ascending, equal, or slightly enlarged above, cylindrical, bay, laccate, the substance similar to the context and darker at the center, 5–10 × 2–3 cm.

TYPE LOCALITY: South Carolina.
HABITAT: Stumps and trunks of oak, sweet gum, maple, and other deciduous trees.
DISTRIBUTION: New York to Florida and west to Texas.
EXSICCATI: Rav. Fungi Am. *5, 47;* Rab.-Wint. Fungi Eur. *3430;* Ellis, N. Am. Fungi *802.*

7. **Ganoderma sessile** Murrill, Bull. Torrey Club **29**: 604. 1902.

A variable plant with wrinkled varnished cap and acute margin, found on decaying deciduous trees. Pileus corky to woody, dimidiate, sessile or stipitate, imbricate or connate at times, conchate to fanshaped, thickest behind, thin at the margin, 5–15 × 7–25 × 1–3 cm.; surface glabrous, laccate, shining, radiate-rugose, concentrically sulcate, yellow to reddish-chestnut, at length opaque, dark-brown usually marked near the margin with alternating bay and tawny zones; margin usually very thin and acute, often curved downward, often undulate, rarely becoming truncate, white, at length concolorous: context soft-corky or woody, radiate-fibrous, concentrically banded, ochraceous-fulvous; tubes 0.5–2 cm. long, 3–5 to a mm., brown within, mouths circular or angular, white or grayish-brown, edges thin, entire: spores ovoid, obtuse at the summit, attenuate and truncate at the base, verrucose, yellowish-brown, 9–11 × 6–8 μ: stipe laterally attached, usually ascending, irregularly cylindrical, 1–4 × 0.5–1.5 cm., resembling the pileus in color, surface and substance, often obsolete.

TYPE LOCALITY: New York.
HABITAT: On decaying wood of deciduous trees.
DISTRIBUTION: Connecticut to Missouri, Alabama, and Louisiana.
EXSICCATI: Ellis & Ev. Fungi Columb. *202.*

8. **Ganoderma zonatum** Murrill, Bull. Torrey Club **29**: 606. 1902.

A soft laccate fungus of medium size marked with numerous tawny and chestnut-colored zones. Pileus very soft-corky, sessile, dimidiate, applanate or convex above, concave below; surface glabrous, zonate, not sulcate, 5 × 7 × 1.5 cm.; margin velvety, acute, becoming obtuse and concolorous: context very soft, floccose, radiate-fibrous, concentrically banded, 0.5 cm. thick, chocolate-brown: hymenium velvety, not stratose; tubes 1 cm. long, 3–4 to a mm., umbrinous within, mouths white to umbrinous, regular, polygonal, stuffed at first with whitish material, covered 0.5–2 cm. from the margin with yellowish or reddish varnish; edges entire, obtuse to acute: spores elongate-ellipsoid, smooth, pale yellowish-brown, 8–10 × 4–6 μ.

TYPE LOCALITY: Florida.
HABITAT: Decayed wood.
DISTRIBUTION: Known only from the type locality.

9. **Ganoderma sulcatum** Murrill, Bull. Torrey Club **29**: 607. 1902.

A large sessile plant without zones, but marked with a few conspicuous concentric furrows. Pileus corky, dimidiate, sessile or arising from a lateral tubercle, plane or convex above, thickest behind, 8 × 11 × 2 cm.; surface laccate, glabrous, azonate, fulvous to chest-

nut, deeply sulcate; margin rounded, velvety, ochroleucous, at length concolorous: context very soft, floccose, radiate-fibrous, concentrically banded, 1 cm. thick, umbrinous-chestnut; tubes indistinctly stratified, 1.25 cm. long, 4–5 to a mm., umbrinous within, mouths whitish or yellowish, at length umbrinous, dissepiments entire, obtuse: spores ellipsoid, pale yellowish-brown, smooth, 8–10 × 4–6 μ.

TYPE LOCALITY: Florida.
HABITAT: On soft palmetto logs and dead standing trunks.
DISTRIBUTION: Georgia and Florida.

10. **Ganoderma praelongum** Murrill, sp. nov.

Pileus corky, orbicular to fan-shaped, plane above, convex to plane below, prominently umbonate behind when young, 4–6 × 5–8 × 1.5–3 cm.; surface glabrous, at length rugose and slightly sulcate, laccate, lustrous, castaneous to bay; margin ochraceous, thin, sterile, sometimes proliferous: context punky, homogeneous, isabelline with a fulvous line adjoining the tubes, 1–2 cm. thick; tubes annual, 1 cm. long, umbrinous within, mouths angular, 3–4 to a mm., edges thin, uneven, white to avellaneous, becoming umbrinous when bruised: spores ovoid, dark-brown, 8 × 5 μ; hyphae subhyaline, 4 μ: stipe lateral, ascending, cylindrical, enlarged above, 10–15 × 1–2 cm., glabrous, laccate, castaneous to nearly black, with substance like that of the pileus except for lines of white mycelium at the center.

Type collected at Alto Cedro, Cuba, on dead wood beneath a large stump in a clearing, March 19, 1905, *F. S. Earle & W. A. Murrill 536*.
DISTRIBUTION: Known only from the type locality.

11. **Ganoderma perzonatum** Murrill, sp. nov.

Sporophores usually clustered; pileus rigid, corky, fan-shaped, thin, concave below, with a prominent umbo behind, 5–9 × 4–8 × 0.5–1 cm.; surface at length glabrous, laccate, subshining, thinly encrusted, 2–3 times shallowly sulcate, densely zonate, zones conspicuously marked with white and bay; margin subobtuse, free behind, undulate to lobed, shining latericeous to bay, often forming a border beneath encircling the hymenium: context soft-corky, multizonate, avellaneous, fulvous next to the tubes, 3–5 mm. thick; tubes indistinctly stratified, 3–5 mm. long each season, avellaneous within, becoming grayish in the older layers because of the white mycelium that fills them, mouths circular to slightly angular, whitish-stuffed when young, regular, 3–4 to a mm., edges nearly white to grayish-avellaneous, finally umbrinous with age: spores ovoid, brown, 8 × 6 μ; hyphae brown, 5 μ: stipe tubercular, umbonate-affixed, often branched, slightly darker than the pileus, 0.5–1 × 0.5–1.5 cm.

Type collected at Santiago de las Vegas, Cuba, on a mango log, November 8, 1904, *F. S. Earle 309*.
DISTRIBUTION: Known only from the type locality.

12. **Ganoderma subfornicatum** Murrill, sp. nov.

Pileus nearly circular, rigid, nearly plane above and below, 8 × 9–11 × 2–3 cm.; surface glabrous, uneven, many times concentrically sulcate, finally zonate, radiate-rugose, dark bay-brown, laccate, shining; margin truncate, concolorous, free behind: context thin, with horny radiations, slightly zonate, fulvous, 5–10 mm. thick; tubes perennial, long and slender, 1 cm. in length each season, smoky-fuliginous, mouths circular, 4 to a mm., stuffed when young, edges obtuse to acute, entire, fuliginous: spores globose, smooth, brown, 4 μ; hyphae 5 μ: stipe sublateral, umbonate-affixed, scutate at the base, compressed, 3–7 × 1.5–2.5 cm., expanding into the pileus, which it resembles in color, surface and context.

Type collected in British Honduras, on dead wood, in 1906, *Morton E. Peck*.
DISTRIBUTION: British Honduras.

13. **Ganoderma pulverulentum** Murrill, sp. nov.

Pileus rigid, corky, dimidiate to fan-shaped, applanate, subimbricate, usually very large, 10–20 × 15–30 × 2–5 cm.; surface glabrous, laccate, lustrous, latericeous to bay, becoming dull-brown with age, broadly sulcate, azonate, uneven, at times proliferous; margin cremeous, pulverulent, subacute, rarely rounded, smooth, undulate to lobed: con-

text punky, zonate, isabelline to umbrinous above, dark-fulvous to bay below, 5–10 mm. thick; tubes perennial, 5–10 mm. long each season, avellaneous within, mouths angular, 4 to a mm., citrinous-melleous, becoming darker with age, umbrinous when bruised, entirely covered at first with a creamy-white powder, which easily rubs off on the fingers, edges acute, entire: spores ovoid, brown, $9 \times 5 \mu$; hyphae 4μ: stipe short, often obsolete, subcylindrical, excentric to lateral, 2–3 × 2–3 cm., expanding above, surface laccate, glabrous, bay to nearly black, darker than the pileus, context punky, dark-fulvous.

Type collected in Grenada, West Indies, on dry manchineel, September 4, 1905, *W. E. Broadway*.

DISTRIBUTION: Grenada.

14. **Ganoderma stipitatum** Murrill.

Fomes stipitatus Murrill, Bull. Torrey Club **30**: 229. 1903.

A plant of medium size with short evanescent lateral stipe, shining reddish-chestnut crust, and broad white thin margin. Pileus exceedingly hard and horny, flat and triangular or somewhat circular when young, becoming dimidiate with ungulate center and thin spreading margin, which is usually lobed and often deeply cleft, hymenium normally plane, but frequently convex because of the upturned margin, 5 × 10 × 3 cm.; surface glabrous, varnished, reddish-chestnut, with numerous shallow concentric furrows, becoming shining-black and at length dull smoky-brown; margin broad, flat, glabrous, obtuse, 3 mm. thick, crenate to cleft, sterile portion 0.5 cm. wide, white: context hard, woody, 0.5–1 cm. thick, pale-ochraceous, with strands of dark-brown shining horny substance extending from the stipe to the margin in a tree-like fashion; tubes plainly though unevenly stratified, 2–4 mm. long each season, 4–5 to a mm., grayish-brown within, mouths circular, white or very pale-yellow, edges thick, obtuse, entire: spores broadly ovoid with attenuate base, light yellowish-brown, smooth, $3.5 \times 5 \mu$: stipe lateral, 1 × 1 cm., cylindrical, equal, glabrous, shining-black to dull-brown, with substance like the context, apparently absorbed or overgrown as the pileus enlarges.

TYPE LOCALITY: Nicaragua.
HABITAT: Dead wood.
DISTRIBUTION: British Honduras; Nicaragua; Costa Rica; Grenada.

15. **Ganoderma subincrustatum** Murrill, sp. nov.

Pileus corky, circular to fan-shaped, plane above, 4–8 × 6–8 × 1–2 cm.; surface glabrous, shallowly sulcate, slightly zonate, laccate, lustrous, yellowish-red to bay or dark-brown; margin cream-colored, sterile, finely tomentose, obtuse to subacute, undulate to lobed: context punky to soft-corky, slightly zonate, homogeneous, isabelline, slightly darker next to the tubes, fulvous with age, 1 cm. thick; tubes annual, 3–5 mm. long, avellaneous within, mouths circular to slightly angular, whitish-stuffed, 4 to a mm., edges obtuse, entire, stramineous, becoming thinner and very pale-avellaneous: spores ellipsoidal, dark-brown, $8 \times 4 \mu$; hyphae brown, 5μ: stipe central to lateral, cylindrical, subequal, 1–5 cm. long, 1–2 cm. thick, resembling the pileus in surface and context, but almost black in color.

Type collected at Hope Gardens, Jamaica, on a logwood stump, October 26, 1902, *F. S. Earle 176*.

DISTRIBUTION: British Honduras and Jamaica.

16. **Ganoderma argillaceum** Murrill, sp. nov.

Pileus corky, dimidiate to circular, plane above, usually convex below, 5–10 × 8–12 × 2–4 cm.; surface glabrous, rugose, not conspicuously marked, laccate, but not lustrous, avellaneous to dull chestnut-colored; margin cream-colored, broad, subobtuse to acute, straight, entire: context punky, concentrically banded, isabelline above, fulvous below, 5–10 mm. thick; tubes annual, 5–10 mm. long, avellaneous within, mouths angular, 3–4 to a mm., edges thin, subentire, white to avellaneous, reddish-brown when bruised: spores ovoid, dark-brown, $12 \times 7 \mu$; hyphae 4μ: stipe central to lateral, short, often wanting,

smooth, glabrous, laccate, lustrous, bay to black, 1–2 × 1 cm., substance corky, otherwise like that of the pileus.

Type collected at Santiago de las Vegas, Cuba, on a dead mango log, July 5, 1904, *F. S. Earle 658*.

DISTRIBUTION: Known only from the type locality.

17. **Ganoderma parvulum** Murrill, Bull. Torrey Club **29**: 605. 1902.

A very small sessile fungus, shining-bay above and honey-yellow below. Pileus woody, nearly circular in outline, attached by a point, convex above, plane or convex below, thickest behind, 2 × 2.5 × 1 cm.; surface glabrous, laccate, azonate, slightly tubercular, very lightly marked with a few concentric furrows; margin acute: context soft-woody, pale-ochraceous, 0.5 cm. thick, with dark horny radiations from the point of attachment; tubes not stratified, 3 mm. long, 5 to a mm., umbrinous within, mouths polygonal, honey-yellow, edges entire, obtuse: spores subglobose, smooth, pale yellowish-brown, 4 × 5 μ.

TYPE LOCALITY: Nicaragua.
HABITAT: Decayed wood.
DISTRIBUTION: Known only from the type locality.

18. **Ganoderma nitidum** Murrill, sp. nov.

Pileus corky, woody, dimidiate or nearly circular, applanate, rarely ungulate or columnar by accretion with age, convex above, slightly concave below, 6–10 × 8–16 × 1.5–7 cm.; surface glabrous, abundantly sulcate, laccate, shining, bay to brownish-black, flaky from the excess of resin exuded; margin ochraceous, subobtuse, undulate to lobed, the new growth often forming a broad lustrous band bordering the hymenium: context very thin, punky, bay, homogeneous, 1–3 mm. thick; tubes stratified, very long and slender, 1.5–2.5 cm., umbrinous to fuliginous within, mouths circular to slightly angular, stuffed with whitish mycelium when young, edges obtuse to very thin and uneven, white to umbrinous.

Type collected in the forests of Rio Esperanza, Puerto Sierra, Honduras, on dead trunks, February 28, 1903, *P. Wilson 607*.
DISTRIBUTION: Honduras.

19. **Ganoderma tuberculosum** Murrill, sp. nov.

Pileus rigid, dimidiate to reniform, applanate, 7–15 × 12–30 × 2–4 cm.; surface glabrous, laccate, shining, many times shallowly sulcate, radiate-rugose, roughly tuberculose, especially in large specimens, usually umbonate behind, bay to dull-brown with age; margin cremeous to fulvous, glabrous, slightly undulate, subobtuse to truncate with age: context punky to soft-corky, isabelline above, fulvous below, castaneous with age, homogeneous, 5–10 mm. thick; tubes perennial, indistinctly stratified, 1–2.5 cm. long, avellaneous within, slightly darker with age, mouths circular, 4 to a mm., not stuffed when young, edges obtuse, cream-colored, at length thin and darker in color: spores ovoid, dark-brown, 8 × 6 μ; hyphae dark-brown, 6 μ.

Type collected in British Honduras, on dead wood, in 1906, *Morton E. Peck*.
DISTRIBUTION: British Honduras.

DOUBTFUL SPECIES

Fomes nitens Fries, Epicr. Myc. 463. 1838. Type collected on trunks in tropical America. Pileus large, sessile, semiglobose, chestnut to black, shining, hanging by a process behind: context umbrinous; tubes very long and slender. Authentic material not found.

Fomes incrustatus Fries, Nov. Symb. 60. 1851. Type collected in Costa Rica by Oersted. Pileus 5–7 cm. broad, dull-umbrinous, laccate: context scanty, pallid; tubes concolorous; stipe central, torulose, unequal. Authentic material not found.

Fomes neglectus Pat. Jour. de Bot. 1: 169. 1887. Type collected on trunks in Nicaragua on the North Pacific exploring expedition. Pileus sessile, 8–10 cm. broad, reddish-black, shining: context brown; tubes white, very short: spores globose, yellow, roughly echinulate, 11–12 μ. The type at Paris is much contorted and very poor, so that it is impossible to locate the species definitely without additional material.

74. CERRENA (Micheli) S. F. Gray, Nat. Arr. Brit. Pl. 1: 649. 1821.

Phyllodontia Karst. Hedwigia 22: 163. 1883.

Hymenophore small, epixylous, sessile, conchate, annual; surface anoderm, hairy or subglabrous, zonate or sulcate: context thin, white, fibrous, flexible; hymenium at first labyrinthiform, soon becoming irpiciform from the splitting of the dissepiments: spores smooth, hyaline.

Type species, *Sistotrema cinereum* Pers.

Surface of pileus conspicuously villose-strigose. 1. *C. unicolor.*
Surface of pileus minutely fibrillose to glabrous. 2. *C. stereoides.*

1. Cerrena unicolor (Bull.) Murrill, Jour. Myc. 9: 91. 1903.

Boletus unicolor Bull. Herb. Fr. *pl. 408.* 1788.
Boletus decipiens Schrad. Spic. Fl. Germ. 169. 1794.
Sistotrema cinereum Pers. Syn. Fung. 551. 1801.
Daedalea unicolor Fries, Syst. Myc. 1: 336. 1821.
Phyllodontia Magnusii Karst. Hedwigia 22: 163. 1883. (Type from Berlin.)
?*Daedalea tortuosa* Cragin, Bull. Washburn Lab. Nat. Hist. 1: 26. 1884. (Type from Kansas.)

Pileus coriaceous, sessile, imbricate, dimidiate to flabelliform, conchate, often laterally confluent, 2.5–3.5 × 5–10 × 0.1–0.3 cm.; surface villose-strigose, rugose, zonate, plicate, isabelline to fulvous, becoming avellaneous with age and blackish and nearly glabrous behind; margin acute, undulate to lobed, paler, zonate, strigose-tomentose: context very thin, membranaceous, white, homogeneous, scarcely 1 mm. thick; tubes decurrent, labyrinthiform, 1–3 mm. long, white or isabelline to fuliginous or umbrinous, averaging 2 to a mm., edges acute, uneven, soon becoming dentate-lacerate, giving the hymenium an irpiciform appearance: spores ovoid, smooth, hyaline, 4–6 × 3–4 μ; hyphae 3–5 μ; cystidia none.

TYPE LOCALITY: France.
HABITAT: Dead deciduous wood of various kinds.
DISTRIBUTION: North temperate zone.
ILLUSTRATIONS: Bull. Herb. Fr. *pl. 408, 501;* Bolt. Hist. Fung. App. *pl. 163;* Sow. Engl. Fungi *pl. 325.*
EXSICCATI: Arcang. Erb. Crit. Ital. II. *723;* Westend. & Wall. Herb. Crypt. *1285;* Sydow, Myc. Mar. *1204, 3425;* Roum. Fungi Gall. *2906;* Desmaz. Pl. Crypt. *466;* Thüm. Fungi Austr. *711, 818, 1009;* Krieger, Fungi Sax. *223;* Linhart, Fungi Hung. *249;* Roum. Fungi Sel. *6728, 6820;* Romell, Fungi Scand. *6;* Ellis, N. Am. Fungi *924;* Ellis & Ev. Fungi Columb. *210;* Shear, N. Y. Fungi *41;* Jacz. Fungi Rossiae *77;* Beck, Krypt. Exs. *313;* Rab.-Wint. Fungi Eur. *3738;* Rav. Fungi Car. *14.*

2. Cerrena stereoides (Fries) Murrill.

Daedalea stereoides Fries, Nov. Symb. 99. 1851.

Pileus coriaceous, flexible, dimidiate or flabelliform, umbonate-affixed, applanate, 2 × 2–3 × 0.1–0.2 cm.; surface pale-isabelline, concentrically lineate or slightly grooved, fibrillose to glabrous; margin very acute, straight, pallid, undulate or slightly lobed: context thin, white to pallid, membranous; tubes 1–1.5 mm. long, white to pallid within, soon becoming irpiciform, mouths 1–2 to a mm., irregular, at first daedaleoid, soon splitting into sharp, slender, forked teeth, which are at first white or yellowish, becoming avellaneous-isabelline and glistening: spores not examined; hyphae 2–4 μ.

TYPE LOCALITY: San José, Costa Rica.
HABITAT: Dead trunks.
DISTRIBUTION: Costa Rica; also in Brazil.

75. DAEDALEA Pers. Syn. Fung. 499. 1801.

Daedaleopsis Schröt. Krypt. Fl. Schles. 3: 492. 1888.

Hymenophore epixylous, usually large and annual, sessile, applanate to ungulate; surface anoderm, glabrous, often zonate: context white or wood-colored, rigid, woody or

punky: hymenium normally labyrinthiform, but varying to lamellate and porose in some species: spores smooth, hyaline.

Type species, *Agaricus quercinus* L.

Tubes one to several millimeters in transverse diameter; surface usually brown or discolored.
- Pileus thick, triangular, margin obtuse.
  - Context isabelline; found on oak and chestnut. 1. *D. quercina.*
  - Context white; found on red cedar and very rare. 2. *D. juniperina.*
- Pileus thin, applanate, margin thin.
  - Pileus very large, 15 cm. or more broad; confined to the tropics. 3. *D. Sprucei.*
  - Pileus less than 10 cm. broad; more abundant in temperate regions. 4. *D. confragosa.*

Tubes less than one half millimeter in transverse diameter; surface white or yellowish.
- Pileus reniform, rigid, usually azonate; plants found in the southern states. 5. *D. Aesculi.*
- Pileus thin, flexible, variously shaped, usually multizonate; plants confined to the tropics. 6. *D. amanitoides.*

1. **Daedalea quercina** (L.) Pers. Syn. 500. 1801.

Agaricus quercinus L. Sp. Pl. 1176. 1753.
Agaricus labyrinthiformis Bull. Herb. Fr. *pl. 352.* 1787.
Polyporus latissimus Fries, Obs. Myc. 1: 128. 1815.
Daedalea quercina nigricans Fries, Syst. Myc. 1: 333. 1821.
? *Daedalea plumbea* Lév. Ann. Sci. Nat. III. 5: 302. 1846. (Type from New York.)
? *Trametes kansensis* Cragin, Bull. Washburn Lab. Nat. Hist. 1: 24. 1884. (Type from Kansas.)

Pileus corky, rigid, dimidiate, sessile, imbricate, applanate, convex below, triangular in section, 6–12 × 9–20 × 2–4 cm.; surface isabelline-avellaneous to cinereous or smoky-black with age, slightly sulcate, zonate at times, tuberculose to colliculose in the older portions; margin usually thin, pallid, glabrous: context isabelline, soft-corky, homogeneous, 5–7 mm. thick; tubes labyrinthiform, becoming nearly lamellate with age in some specimens, 1–2 cm. long, 1–2 mm. broad, chalk-white or discolored within, edges obtuse, entire, ochraceous to avellaneous.

TYPE LOCALITY: France.
HABITAT: Stumps, trunks and timbers of oak and chestnut.
DISTRIBUTION: Temperate North America; also in Europe.
ILLUSTRATIONS: Sow, Engl. Fungi *pl. 181;* Bull. Herb. Fr. *loc. cit.*
EXSICCATI: Ellis, N. Am. Fungi *315;* Beck, Krypt. Exs. *312;* Roum. Fungi Sel. *102;* Krieger, Fungi Sax. *162;* Linhart, Fungi Hung. *53;* Allesch. & Schn. Fungi Bavar. *47;* Sydow, Myc. Mar. *207;* Desmaz. Pl. Crypt. *465.*

2. **Daedalea juniperina** Murrill.

Agaricus juniperinus Murrill, Bull. Torrey Club 32: 85. 1905.

Sporophore corky, sessile, attached by a broad, often decurrent, base, and composed of imbricate, terraced or laterally connate, ungulate pilei 2–5 × 2–7 × 1.5–3 cm.; surface irregular, anoderm, finely tomentose, yellowish-white, becoming cinereous with age; marginal edge fertile, concolorous, not rounded, but often forming an obtuse angle: context corky, white, concentrically banded, 0.5–1 cm. thick; furrows large, labyrinthiform, radially, rarely otherwise, elongate, 0.5–2 cm. long, 1–3 mm. wide, white or pallid, edges obtuse, often splitting into broad irpiciform plates: spores smooth, hyaline, ovoid, 3–4 × 5–6 μ; hyphae hyaline, 5–7 μ; cystidia none.

TYPE LOCALITY: Rockport, Kansas.
HABITAT: Dead stumps and trunks of red cedar.
DISTRIBUTION: Missouri and Kansas.

3. **Daedalea Sprucei** Berk. Jour. Bot. & Kew Misc. 8: 236. 1856.

Lenzites distantifolia Romell, Bih. Sv. Vet.-Akad. Handl. 26 (3)[16]: 12. 1901. (Type from Matto Grosso, Brazil.)

Pileus corky, flexible, very large, applanate, concave below, dimidiate to fan-shaped, thicker behind, 10–20 × 15–30 × 1–2.5 cm.; surface multizonate, slightly furrowed, finely tomentose to glabrous, rugose, sometimes tuberculose, dark-avellaneous or umbrinous, becoming blackish behind; margin thin, zonate, pallid: context zonate, soft-corky, isabelline, nearly fulvous when dry, 3–5 mm. thick; tubes daedaleoid, becoming irpiciform, white within, unctuous to the touch, 2–3 mm. broad, 1–2 cm. deep, edges thick, firm, soon split-

ting into flattened teeth, isabelline to fulvous or fuliginous: spores globose, smooth, brownish, 4–6 μ; hyphae brownish, 4–7 μ; cystidia none.

TYPE LOCALITY: Panuré, Brazil.
HABITAT: Dead trunks of trees.
DISTRIBUTION: Mexico; also in British Guiana and Brazil.
ILLUSTRATION: Romell, *loc. cit. pl. 1, f. 13.*
EXSICCATI: Smith, Centr. Am. Fungi *144.*

4. **Daedalea confragosa** (Bolt.) Pers. Syn. 501. 1801.

Boletus confragosus Bolt. Hist. Fung. Suppl. **3**: 160. 1791.
Daedalea rubescens Alb. & Schw. Consp. Fung. 238. 1805.
Daedalea albida Schw. Schr. Nat. Ges. Leipzig **1**: 93. 1822. Not *D. albida* Fries.
Daedalea zonata Schw. Schr. Nat. Ges. Leipzig **1**: 94. 1822.
?*Daedalea subtomentosa* Schw. Schr. Nat. Ges. Leipzig **1**: 94. 1822. (Type from North Carolina.)
Daedalea discolor Fries, Elench. Fung. 68. 1828. (Type from Carolina.)
Daedalea discolor Klotzsch, Linnaea **8**: 481. 1833.
Daedalea corrugata Klotzsch, Linnaea **8**: 481. 1833. (Type from boreal North America.)
Trametes rubescens Fries, Epicr. Myc. 492. 1836.
Lenzites Klotzschii Berk. Ann. Mag. Nat. Hist. **7**: 452. 1841. (Type from boreal North America.)
Lenzites Crataegi Berk. Lond. Jour. Bot. **6**: 323. 1847. (Type from Ohio.)
Lenzites bicolor Fries, Nov. Symb. 43. 1851. (Type from Mexico.)
Lenzites Cookeii Berk. Grevillea **4**: 161. 1876. (Type from New York.)
Lenzites proxima Berk. Grevillea **4**: 162. 1876. (Type from New York.)
Agaricus confragosus Murrill, Bull. Torrey Club **32**: 86. 1905.

Pileus corky to woody, imbricate, sessile, dimidiate, convex or plane above, variable in size, 2–7 × 3–10 × 0.5–1.5 cm.; surface multizonate, rugose, scrupose, often tuberculose, becoming glabrous, isabelline or avellaneous to latericeous-fuscous; margin thin, entire to lobed, pallid, fertile, dark-brown when bruised: context corky to woody, white to avellaneous, zonate, 3–10 mm. thick; tubes very variable, porose or labyrinthiform, often becoming lamellate with age, 0.5–1.5 mm. broad, 5–10 mm. deep, white or avellaneous within, mouths grayish-pruinose when young, becoming umbrinous or reddish-fuscous, edges thin, becoming lacerate-dentate and often fimbriate, turning at once to yellowish-brown when bruised: spores smooth, hyaline, cylindrical to ellipsoid, 5–8 × 2–3 μ; hyphae hyaline or brownish, 4 μ; cystidia none.

TYPE LOCALITY: Fixby-Hall, Halifax, England.
HABITAT: Various forms of dead deciduous wood.
DISTRIBUTION: North America; also in Europe.
ILLUSTRATIONS: Bolt. Halifax Fung. Suppl. *pl. 160;* Alb. & Schw. Consp. Fung. *pl. 11, f. 2.*
EXSICCATI: Rav. Fungi Am. *416;* Rab.-Wint. Fungi Eur. *3530;* Ellis & Ev. N. Am. Fungi *1924, 1925, 1926, 1927, 1928;* Rav. Fungi Car. *15;* Shear, N. Y. Fungi *40.*

5. **Daedalea Aesculi** (Schw.) Murrill.

Boletus Aesculi-flavae Schw. Schr. Nat. Ges. Leipzig **1**: 96. 1822.
Polyporus Aesculi Fries, Elench. Fung. 99. 1828.
Trametes incana Berk. Lond. Jour. Bot. **4**: 305. 1845. (Type from Ohio.) Not *T. incana* Lév.
Daedalea ambigua Berk. Lond. Jour. Bot. **4**: 305. 1845. (Type from Ohio.)
?*Daedalea pallidofulva* Berk. Lond. Jour. Bot. **6**: 322. 1847. (Type from Ohio.)
Trametes ambigua Fries, Nov. Symb. 96. 1851.
Lenzites glaberrima Berk. & Curt. Grevillea **1**: 34. 1872. (Type from South Carolina.)
Daedalea glaberrima Berk. & Curt. Grevillea **1**: 67. 1872. (Type from South Carolina.)
Trametes Berkeleyi Cooke, in Sacc. Syll. Fung. **9**: 194. 1891. (Type from Ohio.)
Trametes lactea Fries. Nov. Symb. 96. 1851. (Type from Carolina.)
Agaricus Aesculi Murrill, Bull. Torrey Club **32**: 89. 1905,

Pileus corky, hard, reniform, sessile or spuriously stipitate, simple, applanate, 8–12 × 10–20 × 0.5–1.5 cm.; surface glabrous, smooth, azonate, polished, milk-white to yellowish, sometimes purplish-black with age; margin rather thin, white, entire or undulate: context floccose, zonate, white, 4–8 mm. thick; tubes varying from circular to labyrinthiform, minute, white, 3 to a mm. measured transversely, 4–6 mm. deep, edges thick, entire, white to isabelline: spores globose, smooth, hyaline, 2–3 μ; hyphae hyaline, 7 μ; cystidia none.

TYPE LOCALITY: North Carolina.
HABITAT: Dead trunks of deciduous trees.
DISTRIBUTION: South Carolina to Missouri and south to Florida and Texas.
EXSICCATI: Rab.-Wint. Fungi Eur. *3334;* Ellis & Ev. N. Am. Fungi *1593.*

6. **Daedalea amanitoides** Beauv. Fl. Oware 1 : 44. *pl. 25*. 1805.

Daedalea elegans Spreng. Sv. Vet. Acad. Handl. 1820 : 51. 1820.—Fries, Syst. Myc. 1 . 335. 1821 ; Elench. Fung. 69. 1828.
Daedalea Palisoti Fries, Syst. Myc. 1 : 335. 1821.
Daedalea levis Hook.; Kunth, Syn. Pl. 1 : (9). 1822. (Type from Surinam.)
Daedalea repanda Pers.; Gaud. Voy. Freyc. Bot. 168. 1826. (Type from the Island of Rawak.)—Mont. Pl. Cell. Cuba 382. *pl. 14, f. 4*. 1842.
Daedalea deplanata Fries, Linnaea 5 : 513. 1830. (Type from Brazil.)
Daedalea applanata Klotzsch, Linnaea 8 : 481. 1833. (Type from Mauritius.)
Lenzites applanata Fries, Epicr. Myc. 404. 1838.
Lenzites Palisoti Fries, Epicr. Myc. 404. 1838.
Lenzites repanda Fries, Epicr. Myc. 404. 1838.
Lenzites deplanata Fries, Epicr. Myc. 492. 1838.
Trametes elegans Fries, Epicr. Myc. 492. 1838. (Type from Guadeloupe.)
Lenzites platypoda Lév. Crypt. Bonite 184. 1846. (Type from Manila.)
Trametes centralis Fries, Nov. Symb. 95. 1851. (Type from the West Indies.)

Pileus very thin, very large, flexible, corky-woody, subsessile, usually attached by an orbicular peltate base, explanate, umbilicate, circular to fan-shaped, variable, 8–20 × 15–30 × 0.2–0.5 cm.; surface varying from entirely azonate to zonate, and from milk-white to partially avellaneous, glabrous, slightly sulcate, sometimes blackening behind with age ; margin thin, white, undulate to lobed : context milk-white, floccose, homogeneous, 2–4 mm. thick ; tubes very variable in shape, circular to labyrinthiform and lamelloid, narrow, hardly exceeding 0.5 mm. in breadth, 2–3 mm. deep, white within, edges white to discolored, thin, uneven, dentate with age : spores oblong, smooth, hyaline, 5–8 × 2–3 μ ; hyphae, 3–4 μ.

TYPE LOCALITY : Wari, Africa.
HABITAT : Dead deciduous wood.
DISTRIBUTION : Tropical America ; also in old-world tropics.
ILLUSTRATIONS : Beauv. Fl. Oware *pl. 25 ;* Afzel. Fung. Guin. *pl. 11, f. 23.*
EXSICCATI : Roum. Fungi Gall. *3205*.

DOUBTFUL SPECIES

Daedalea violacea Lév. Ann. Sci. Nat. III. 5 : 142. 1846. Described from Cuba, and said by the author to be violet-colored on both surface and hymenium. Authentic specimens have not been found.

76. **LENZITES** Fries, Gen. Hymen. 10. 1836.

Hymenophore small, annual, epixylous, sessile, conchate ; surface anoderm, usually zonate and tomentose : context white, coriaceous, flexible ; hymenium lamellate, the radiating gill-like dissepiments connected transversely at times, especially in youth : spores smooth, hyaline.

Type species, *Daedalea betulina* (L.) Fries.

Surface of the pileus conspicuously tomentose.	
Furrows 1–2 mm. broad, 3–10 mm. deep, soon becoming entirely lamellate ; found in temperate regions.	1. *L. betulina.*
Furrows 0.5–1 mm. broad, 2–3 mm. deep, anastomosing in front and behind, lamellae often porose ; found in Mexico.	2. *L. betuliniformis.*
Surface of the pileus finely pubescent ; found in Cuba.	3. *L. cubensis.*
Surface of the pileus glabrous ; found in Jamaica.	4. *L. Earlei.*

1. **Lenzites betulina** (L.) Fries, Epicr. Myc. 405. 1838.

Agaricus betulinus L. Sp. Pl. 1176. 1753.
Daedalea betulina Rebent. Prodr. Fl. Neom. 371. 1804. — Fries, Obs. 1 : 104. 1815.
Daedalea betulina velutina Berk. Ann. Nat. Hist. 3 : 381. 1839.
Lenzites flaccida Fries, Epicr. Myc. 406. 1838.
Lenzites variegata Fries, Epicr. Myc. 406. 1838.
Lenzites Berkeleyi Lév. Ann. Sci. Nat. III. 5 : 122. 1846. (Type from New York.)
Lenzites ungulinformis Berk. & Curt. Jour. Bot. & Kew Misc. 1 : 101. 1849. (Type from North Carolina.)

Pileus thin, coriaceous, sessile, dimidiate to flabelliform, imbricate, conchate, 3–4 × 4–7 × 0.3–1 cm.; surface conspicuously tomentose, velvety, multizonate, somewhat uneven, often radiate-rugose to plicate, avellaneous with latericeous zones, becoming olivaceous with

age; margin thin, undulate to lobed at times: context very thin, white, membranous, scarcely a mm. thick; furrows slightly anastomosing when very young, 1–2 mm. broad, 3–10 mm. deep, edges thin, entire to undulate, slightly notched with age, cremeous within, ochroleucous to sordid-ochraceous without: spores globose, smooth, hyaline, 6 μ; hyphae 8 μ; cystidia none.

TYPE LOCALITY: Sweden.
HABITAT: Various forms of dead deciduous wood; rarely on coniferous wood.
DISTRIBUTION: Temperate North America; also in Europe.
ILLUSTRATION: Sow. Engl. Fungi *pl. 182*.
EXSICCATI: Rav. Fungi Am. *415*; Rav. Fungi Car. *14*; Westend. & Wall. Herb. Crypt. *145*; Rab.-Wint. Fungi Eur. *3529*; Sydow, Myc. Mar. *3214, 4607*; Roum. Fungi Gall. *2008*; Karst. Finl. Fungi *112*; Ellis, N. Am. Fungi *2*; Ellis & Ev. Fungi Columb. *702*; Shear, N. Y. Fungi *25*.

2. **Lenzites betuliniformis** Murrill, sp. nov.

Pileus thin, coriaceous to woody, sessile, dimidiate, imbricate, conchate, 2–3 × 3–5 × 0.3–0.5 cm.; surface velvety, tomentose, narrowly multizonate, smooth, isabelline to avellaneous, some of the zones slightly darker; margin thin, fertile, rarely lobed: context white, membranous, scarcely a mm. thick; furrows ochraceous within, frequently anastomosing both in front and behind and interrupted by pores and bifurcations, 0.5–1 mm. broad, 2–3 mm. deep, edges thin, undulate to lacerate, often porose.

Type collected at Jalapa, Mexico, on dead wood, *C. L. Smith 21*.
DISTRIBUTION: Known only from the type locality.

3. **Lenzites cubensis** Berk. & Curt. Jour. Linn. Soc. **10**: 303. 1868.

Pileus rigid, corky to woody, dimidiate to flabelliform, applanate or convex, 4 × 6 × 0.3–0.5 cm.; surface subvelvety, zonate, rugose, finely tomentose, isabelline; margin thin, ochraceous, fertile: context soft-corky to membranous, 1–2 mm. thick, isabelline in type specimens; furrows repeatedly forked, 1 mm. broad, edges crenate or crisped, broad, concolorous.

TYPE LOCALITY: Cuba.
HABITAT: Dead wood.
DISTRIBUTION: Known only from the type locality.

4. **Lenzites Earlei** Murrill, sp. nov.

Pileus thin, dry, membranaceous, flexible, dimidiate, 3 × 5 × 0.5 cm.; surface glabrous, smooth, finely zonate, white; margin very thin, uneven, reddish-brown, multizonate, pellucid on the extreme border: context thin, white, membranous, scarcely a mm. thick; furrows not anastomosing at the base, very narrow and long, porose or forked at the margin, 0.3–0.5 mm. broad, 2–5 mm. deep, edges white, crisped, very thin, lacerate-fimbriate with age.

Type collected at Port Antonio, Jamaica, on a fence post, November, 1902, *F. S. Earle 529*.
DISTRIBUTION: Known only from the type locality.

DOUBTFUL SPECIES

Lenzites tenuis Lév. Ann. Sci. Nat. **5**: 122. 1846. Type from Guadeloupe. Authentic material is to be seen at Paris, but this is insufficient to definitely locate or properly describe the species. *Lenzites cubensis* is probably its nearest known relative.

77. **GLOEOPHYLLUM** Karst. Bidr. Finl. Nat. Folk **37**: x, 79. 1882.

Sesia Adans. Fam. 2: 10; hyponym. 1763.
Serda Adans. Fam. 2: 11; hyponym. 1763.
Lenzitina Karst. Finl. Basidsv. 337. 1889.

Hymenophore small, annual, epixylous, sessile; surface hairy or glabrous, anoderm, often zonate: context tough, brown; hymenium normally lamelloid or daedaleoid, but frequently poroid in some species: spores smooth, hyaline.

Type species, *Lenzites saepiaria* Fries.

Hymenium lamelloid from the first ; pileus very thin, dry, flexible.
  Furrows 1 mm. or more broad, margin tomentose ; species tropical. 1. *G. striatum.*
  Furrows less than 1 mm. broad, margin broadly and conspicuously strigose ; species known only from the Rocky Mountains. 2. *G. abietinellum.*
Hymenium not lamelloid from the first, but often becoming so with age ; pileus thicker and usually rigid.
  Context avellaneous to umbrinous, furrows about 0.5 mm. broad. 3. *G. trabeum.*
  Context ferruginous to castaneous, furrows about 1 mm. broad.
    Surface hirsute. 4. *G. hirsutum.*
    Surface finely tomentose to glabrous. 5. *G. Berkeleyi.*

1. **Gloeophyllum striatum** (Sw.) Murrill, Bull. Torrey Club **32** : 370. 1905.

Agaricus striatus Sw. Prodr. 148. 1788.—Sw. Fl. Ind. Occ. 1920. 1806.
Daedalea striata Fries, Syst. Myc. 1 : 334. 1821.
Lenzites striata Fries, Epicr. Myc. 406. 1838.
Lenzites protracta Fries, Nov. Symb. 45. 1851. (Type from Mexico.)
Sesia striata Murrill, Bull. Torrey Club **31** : 604. 1904.

Pileus membranaceous, flexible, dry, dimidiate to flabelliform, conchate, sessile, sometimes spuriously stipitate, imbricate, laterally connate and broadly attached or umbonate-affixed according to its position on the substratum, 2–6 × 5–8 × 0.3–0.5 cm.; surface anoderm, distinctly tomentose, zonate, opaque, isabelline to umbrinous or cinereous; margin very thin, fertile, undulate, eroded with age : context very thin, punky, scarcely a mm. thick in most specimens, umbrinous; tubes lamelloid from the first, avellaneous to umbrinous, furrows 1–1.5 mm. broad, 2–4 mm. deep, edges thin, entire to irregularly notched and splitting with age, especially behind : spores oblong, smooth, hyaline, 6–8 × 3–4 μ.

TYPE LOCALITY : Jamaica.
HABITAT : Dead wood of various kinds.
DISTRIBUTION : Tropical America.
EXSICCATI : Roum. Fungi Gall. *4014*.

2. **Gloeophyllum abietinellum** Murrill, sp. nov.

Pileus thin, membranaceous, flexible, dry, dimidiate to reniform, laterally connate, applanate, 2–4 × 3–6 × 2–2.5 cm.; surface conspicuously tomentose, becoming nearly glabrous behind, anoderm, densely zonate, smooth, avellaneous to fulvous; margin very thin, undulate or slightly lobed, broadly strigose until mature, fertile, pallid : context very thin, membranous, fulvous-fuliginous; tubes lamelloid from the first, avellaneous to fuliginous, 0.5–1 mm. broad, 2–3 mm. deep, edges thin, subentire, irregularly toothed with age.

Type collected on logs in the Rocky Mountains in 1885, *John Macoun 524*.
DISTRIBUTION : Known only from the type locality.

3. **Gloeophyllum trabeum** (Pers.) Murrill.

Agaricus trabeus Pers. Syn. Fung. xxix. 1801.
Daedalea trabea Fries, Syst. Myc. 1 : 335. 1821.
Lenzites trabea Fries, Epicr. Myc. 406. 1838.
Lenzites vialis Peck, Ann. Rep. N. Y. State Mus. **26** : 67. 1874. (Type from New York, on railroad ties.)
Sesia pallidofulva Murrill, Bull. Torrey Club **31** : 605. 1904.
Gloeophyllum pallidofulvum Murrill, Bull. Torrey Club **32** : 370. 1905.

Pileus corky, rather soft, dimidiate, sessile, laterally connate, plane or convex above, nearly plane below, 2 × 4–8 × 0.5–1 cm.; surface anoderm, tomentose, smooth or slightly tubercular, usually azonate, opaque, isabelline when fresh, becoming avellaneous to umbrinous and finally fuliginous behind, changing immediately to ferruginous or fulvous when bruised ; margin very thin, nearly entire, ochroleucous : context soft, punky, homogeneous, dull-umbrinous, 1–3 mm. thick ; tubes annual, 2–4 mm. long, ochroleucous to isabelline within, mouths irregular, daedaleoid or radially elongate, averaging 0.5 mm. in width, edges uneven, isabelline to grayish-umbrinous or fulvous, the transverse walls often splitting with age and giving the hymenium a lamelloid appearance : spores cylindrical, smooth, hyaline, 9–12 × 3–4 μ.

TYPE LOCALITY: Frankfurt, Germany.
HABITAT: Dead deciduous and coniferous wood, structural timber in particular.
DISTRIBUTION: Temperate regions of North America and Europe.
EXSICCATI: Ellis, N. Am. Fungi *703*; Ellis & Ev. Fungi Columb. *209*.

4. **Gloeophyllum hirsutum** (Schaeff.) Murrill, Jour. Myc. **9**: 94. 1903.

Agaricus hirsutus Schaeff. Fung. Bavar. *pl. 76*. 1762.
Agaricus saepiarius Wulfen, in Jacq. Coll. 1: 347. 1786.
Agaricus boletiformis Sow. Engl. Fungi *pl. 418*. 1814.
Daedalea saepiaria Fries, Obs. Myc. 1: 105. 1815.
Lenzites saepiaria Fries, Epicr. Myc. 407. 1838.
Lenzites rhabarbarina Berk. & Curt. Ann. Mag. Nat. Hist. II. **12**: 428. 1858. — Grevillea 1: 35. 1872. (Type from South Carolina.)
Sesia hirsuta Murrill, Jour. Myc. **9**: 88. 1903.

Pileus hard, corky to woody, slightly flexible, imbricate, sessile, laterally connate, often decurrent, oblong-dimidiate to flabelliform, conchate, 2–3 × 4–8 × 0.3–1 cm.; surface zonate, strigose-tomentose, scrupose, anoderm, rather uneven, reddish-fulvous to fuliginous or umbrinous; margin rather thick, sterile, isabelline, undulate, finely tomentose, becoming acute and darker in age: context soft-corky, homogeneous, fulvous, about 2 mm. thick; tubes usually lamelloid, anastomosing when young, ochraceous to grayish-umbrinous, 0.5–1 mm. broad, 2–5 mm. deep, edges thin, undulate; in a poroid variety, tubes circular, regular, 2 to a mm., edges thick, firm, entire: spores ellipsoid, smooth, hyaline, 8–12 × 3–4 μ; basidia hyaline, 25–30 × 5–6 μ; hyphae luteous, 2.5–3 μ.

TYPE LOCALITY: Bavaria.
HABITAT: Dead coniferous wood.
DISTRIBUTION: North Temperate zone.
ILLUSTRATION: Sow. Engl. Fungi *loc. cit.*
EXSICCATI: Roum. Fungi Gall. *855*; Rab.-Wint. Fungi Eur. *2825*; Allesch. & Schn. Fungi Bavar. *434*; Krieger, Fungi Sax. *69*; Roum. Fungi Sel. *5402*; Thüm. Myc. Univ. *2202*; Desmaz. Pl. Crypt. *2155*; Ellis & Ev. N. Am. Fungi *2505*; Rav. Fungi Am. *208*; Ellis, N. Am. Fungi *1*; Rav. Fungi Car. *7*.

5. **Gloeophyllum Berkeleyi** (Sacc.) Murrill, Bull. Torrey Club **32**: 370. 1905.

Daedalea rhabarbarina Berk. & Cooke, Grevillea **6**: 130. 1877. Not *D. rhabarbarina* Mont.
Daedalea Berkeleyi Sacc. Syll. Fung. **6**: 381. 1888.
? *Lenzites endothaea* Pat. Jour. de Bot. **3**: 165. 1889. (Type from the island of La Trinité, South America.)
? *Daedalea Burserae* Pat. Jour. de Bot. **3**: 341. 1889. (Type from Martinique, on rotten wood of *Bursera gummifera*.)
Daedalea jamaicensis P. Henn. Hedwigia **37**: 281. 1898. (Type from Port Antonio, Jamaica, on dead wood.)
Sesia Berkeleyi Murrill, Bull. Torrey Club **31**: 604. 1904.

Pileus corky, subrigid, dimidiate, sessile, imbricate, laterally connate, plane above, usually convex below, 3–5 × 5–10 × 0.8–2 cm.; surface finely tomentose to glabrous and subshining, zonate, slightly sulcate, radiately furrowed, cremeous or isabelline to fulvous or chestnut-colored and finally black behind; margin obtuse, tomentose, white or cream-colored to ochraceous-fulvous: context punky to soft-corky, homogeneous, 2–4 mm. thick, fulvous, tinted with rhubarb when very young; tubes irregular, daedaleoid, branched or forked, becoming much elongate radially, 5–15 mm. deep, about 1 mm. broad, wider with age; edges white or ochraceous to fulvous, thin, rigid, sinuate, rarely splitting even with age.

TYPE LOCALITY: Gainesville, Florida, on pine stumps.
HABITAT: Dead coniferous wood.
DISTRIBUTION: Gulf states and tropical America.
EXSICCATI: Smith, Centr. Am. Fungi *139*.

DOUBTFUL SPECIES

Lenzites mexicana Mont. Ann. Sci. Nat. II. **20**: 360. 1843. Collected by Andrieux, on dead wood in the province of Oaxaca, Mexico. Not *Gloeophyllum striatum*, although closely related. Authentic specimens are old and discolored.

78. **CYCLOPORUS** Murrill, Bull. Torrey Club 31 : 423. 1904.

Hymenophore annual, tough, anoderm, terrestrial, centrally stipitate: context soft, spongy, ferruginous; pores at first polygonal, soon becoming continuous concentric furrows, dissepiments thin, lamelloid: spores ovoid, smooth, ferruginous.

Type species, *Cyclomyces Greenei* Berk.

1. **Cycloporus Greenei** (Berk.) Murrill, Bull. Torrey Club 31 : 424. 1904.

Cyclomyces Greenei Berk. Lond. Jour. Bot. 4 : 306. 1845.

Pileus circular, obconic to explanate, rarely cespitose, 5-10 cm. broad, 5–10 mm. thick at the center, much thinner at the margin; surface undulate, zonate, tomentose to glabrous and shining, ferruginous to fulvous, fuliginous-black in some old plants; margin at first rounded, sterile, undulate, isabelline, becoming very thin, darker, and somewhat eroded with age: context spongy, fragile, zonate, ferruginous to fulvous, scarcely 1 mm. thick in mature plants; tubes oblong-polygonal when very young, soon becoming concentric furrows, 5–8 mm. deep, 1–2 mm. wide, undulate, pale-fulvous to fuliginous, edges isabelline to umbrinous, very thin, uneven, splitting with age: spores ovoid, smooth, pale-ferruginous, 5–6 × 10–12 μ: stipe central, enlarged above, irregular, tomentose, fulvous to fuliginous, spongy and brown within, 3–8 cm. long, 1.5–2 cm. thick.

TYPE LOCALITY: Massachusetts.
HABITAT: On the ground in woods.
DISTRIBUTION: New England to North Carolina and west to Iowa.
ILLUSTRATION: Lond. Jour. Bot. 4: *pl. 11.*

DOUBTFUL AND EXCLUDED SPECIES OF POLYPORACEAE

Lenzites verrucosa Kickx, Bull. Acad. Roy. Belg. 8²: 73. *pl. 1.* 1841. Not a *Lenzites*, but a species of *Lentinus.*

Polyporus dendriticus Fries, Nov. Symb. 53. 1851. Described from Liebmann's collections in Mexico.

Trametes mexicana Berk. & Curt. Jour. Linn. Soc. 9 : 423. 1867. Collected by Botteri in Mexico.

Polyporus brunneus Schw.; Sacc. Syll. Fung. 6 : 149. 1888. Listed but not described. The name is incorrectly attributed to Schweinitz' publications.

Polyporus citrinellus Berk. & Curt. in Sacc. Syll. Fung. 6 : 149. 1888. The name is taken from Curtis' catalogue, but no description accompanies it.

Polyporus citromallus Berk. & Curt. in Sacc. Syll. Fung. 6 : 149. 1888. A manuscript name attached to an imperfect Cuban specimen in Berkeley's herbarium.

Ptychogaster cubensis Pat. Bull. Soc. Myc. Fr. 12 : 133. 1896. Collected by Wright in Cuba at the base of trunks. An abnormal fruiting form of some species of polypore.

Bresadolia Mangiferae Pat.; Duss, Enum. Champ. Guad. 36. 1903. Collected by Duss in Guadeloupe on a trunk of *Mangifera indica.*

Family 6. **BOLETACEAE**

By William Alphonso Murrill

Hymenophore annual, nearly always terrestrial and centrally stipitate: context fleshy; hymenium poroid, fleshy, never gelatinous.

Tubes not arranged in radiating rows (except in one or two species of *Boletus*).
- Spores hyaline, often becoming yellowish; stem hollow, not reticulate. — 1. Gyroporus.
- Spores rosy or flesh-colored; stem solid, usually reticulate. — 2. Tylopilus.
- Spores ochraceous to brown or black.
  - Stipe neither glandular-dotted nor annulate.
    - Mouths of tubes never uniformly red nor reddish-brown, tubes unicolorous. — 3. Ceriomyces.
    - Mouths of tubes red or reddish-brown, tubes yellowish within. — 4. Suillellus.
  - Stipe either glandular-dotted or annulate.
    - Stipe glandular-dotted, exannulate. — 5. Rostkovites.
    - Stipe annulate, glandular-dotted in some species.
      - Spores ochraceous to yellowish-brown, smooth, usually oblong-ellipsoid.
        - Sporophore not covered with a yellow powder.
          - Pileus smooth, viscid. — 6. Boletus.
          - Pileus floccose-verrucose, dry. — 7. Boletellus.
        - Sporophore covered with a conspicuous yellow powder. — 8. Pulveroboletus.
      - Spores brownish-black, rough, subglobose. — 9. Strobilomyces.

Tubes arranged in radiating rows.
- Stipe exannulate. — 10. Boletinellus.
- Stipe annulate. — 11. Boletinus.

1. **GYROPORUS** Quél. Ench. Fung. 161. 1886.

Suillus P. Karst. Bidr. Finl. Nat. Folk 37: 1. 1882.

Hymenophore annual, terrestrial, centrally stipitate; surface dry, minutely tomentose to floccose-squamose: context white, less compact than in most members of the family and therefore drying more readily; tubes free, small, cylindric, white, not covered with a veil: spores ellipsoid, smooth, white, at length pale-yellow: stipe soft and spongy within, usually becoming hollow.

Type species, *Gyroporus cyanescens* (Bull.) Quél.

Flesh white, quickly changing to blue when wounded; pileus grayish-yellow, floccose. — 1. *G. cyanescens.*

Flesh white, unchangeable.
- Pileus reddish-brown. — 2. *G. castaneus.*
- Pileus pale-yellowish. — 3. *G. subalbellus.*

1. **Gyroporus cyanescens** (Bull.) Quél. Ench. Fung. 161. 1886.

Boletus cyanescens Bull. Herb. Fr. *pl. 369.* 1787.
Boletus constrictus Pers. Syn. Fung. 508. 1801.
Leccinum constrictum S. F. Gray, Nat. Arr. Brit. Pl. 1: 647. 1821.
Boletus lacteus Lév. Ann. Sci. Nat. III. 9: 124. 1848.
Suillus cyanescens P. Karst. Bidr. Finl. Nat. Folk 37: 1. 1882.

Pileus convex, gregarious at times, 6–12 cm. broad, 1.5 cm. or more thick; surface pale-tan with grayish-white background or slightly brownish, opaque, appressed-tomentose or tomentose-squamulose; margin entire, concolorous, adorned in young plants with a distinct cortina, which is a part of the general hairy covering: context white or grayish-white, sweet, 1 cm. or more thick, quickly changing to indigo-blue when wounded; hymenium nearly plane, depressed near the stem; tubes free, short, about 4 mm. long, white to yellowish, quickly changing to indigo-blue when wounded, mouths circular, small, edges thin, entire: spores ellipsoid, smooth, hyaline to pale-yellowish, 9–11 × 5–6 μ: stipe ventricose,

hollow at maturity, concolorous, clothed with cottony threads, white within, becoming indigo-blue when wounded, 5–10 cm. long, 1.5–3.5 cm. thick.

TYPE LOCALITY: France.
HABITAT: In woods and open places.
DISTRIBUTION: Canada and the northern United States from Maine to Minnesota and south to North Carolina; also in Europe.
ILLUSTRATIONS: Bull. Herb. Fr. *pl. 369;* Gill. Champ. Fr. *pl. 54;* Fries, Sv. Aetl. Svamp. *pl. 80;* Sturm, Deuts. Fl. Pilze 5: *pl. 44.*

2. **Gyroporus castaneus** (Bull.) Quél. Ench. Fung. 161. 1886.

Boletus castaneus Bull. Herb. Fr. *pl. 328.* 1786.
Suillus castaneus P. Karst. Bidr. Finl. Nat. Folk 37: 1. 1882.

Pileus convex to subexpanded, slightly depressed, gregarious, 3–7 cm. broad; surface smooth, dry, minutely but densely tomentose, orange-brown, fulvous, or reddish-brown; margin thin, usually paler: context white, firm, nutty in flavor, unchanging when wounded; tubes depressed, sinuate, short, watery-white becoming light-yellow to dark-cremeous, mouths angular, small, stuffed when young, edges thin, entire: spores ellipsoid, smooth, hyaline to pale-yellowish, 8–9 × 4.5–5.5 μ: stipe subattenuate above and below, cylindric or somewhat flattened, tomentose, bright-brown, lighter at the apex, brittle, loosely stuffed, with a small cylindric cavity at the center, 4–5 cm. long, 6–10 mm. thick.

TYPE LOCALITY: France.
HABITAT: In sandy soil in open woods.
DISTRIBUTION: Temperate North America and Europe.
ILLUSTRATIONS: Bull. Herb. Fr. *pl. 328;* Barla, Champ. Nice *pl. 32, f. 11–15;* Gill. Champ. Fr. *pl. 51;* McIlv. Am. Fungi *pl. 114, f. 3;* Ann. Rep. N. Y. State Mus. 48: *pl. 36, f. 1–7;* Hussey, Ill. Brit. Myc. 2: *pl. 17.*
EXSICCATI: Ellis & Ev. N. Am. Fungi *2302.*

3. **Gyroporus subalbellus** Murrill, sp. nov.

Pileus convex, rather thick, scattered, 5 cm. broad; surface dry, smooth, finely tomentose to glabrous, pale-isabelline; margin entire, fertile: context spongy-fleshy, easily drying, whitish, unchanging; tubes nearly free, longer than the thickness of the context, mouths light-yellow, unchanging: spores ovoid, smooth, hyaline under a microscope, 7 × 4.5 μ: stipe ventricose, thick, distorted, smooth, pale-isabelline or nearly white, hollow, 7 cm. long.

Type collected at Ocean Springs, Mississippi, on sandy soil in mixed woods, September 14, 1904, *Esther S. Earle 203.*
DISTRIBUTION: Known only from the type locality.

2. **TYLOPILUS** P Karst. Rev. Myc. 3^9: 16. 1881.

Dictyopus Quél. Ench. Fung. 159. 1886.
Rhodoporus Quél. Fl. Myc. Fr. 420. 1888.

Hymenophore annual, terrestrial or rarely epixylous, centrally stipitate; surface dry, glabrous or minutely tomentose: context white, fleshy, sometimes bitter; tubes small, angular, white, becoming flesh-colored from the spores, not covered with a veil: spores oblong-ellipsoid, smooth, rosy or flesh-colored, rarely inclining to ferruginous: stipe solid, even or reticulate.

Type species, *Tylopilus felleus* (Bull.) P. Karst.

Pileus yellow to brown.
  Sporophore large; stipe 1 cm. or more thick.
    Context decidedly bitter. 1. *T. felleus.*
    Context not bitter. 2. *T. indecisus.*
  Sporophore usually small; stipe about 5 mm. thick, never reticulate. 3. *T. gracilis.*
Pileus black or blackish; tubes becoming blackish when wounded. 4. *T. alboater.*

1. **Tylopilus felleus** (Bull.) P. Karst. Rev. Myc. 3^9: 16. 1881.

Boletus felleus Bull. Herb. Fr. *pl. 379.* 1787.
? *Boletus modestus* Peck, Ann. Rep. N. Y. State Mus. 25: 81. 1873. (Type from New York.)
Boletus ferrugineus Frost, Bull. Buffalo Soc. Nat. Sci. 2: 104. 1874.
Dictyopus felleus Quél. Ench. Fung. 159. 1886.
Rhodoporus felleus Quél. Fl. Myc. Fr. 420. 1888.
Boletus subpunctipes Peck, Bull. N. Y. State Mus. 116: 19. 1907.

Pileus thick, convex, usually 8–15 cm. broad, sometimes reaching a diameter of over

40 cm.; surface smooth, glabrous, variable in color, usually some shade of tan or chestnut, often pink or purplish when young; margin entire, concolorous: context white, often tinged with pink where wounded, at first firm, but soft and yielding in older specimens, decidedly bitter, especially when young, sometimes losing its bitter taste with age; tubes adnate, depressed, 1–2 cm. long, slender, white, colored at maturity with the flesh-colored spores, mouths angular, of medium size, edges thin, entire: spores fusiform, smooth, flesh-colored, 8–11 × 3–4 μ: stipe cylindric, enlarged below, glabrous, subconcolorous, usually reticulate above, and sometimes entirely to the base, firm, solid, becoming spongy in large specimens, 5–12 cm. long, 1.5–2.5 cm. thick.

TYPE LOCALITY: France.
HABITAT: On the ground in woods.
DISTRIBUTION: Temperate North America and Europe.
ILLUSTRATIONS: Bull. Conn. Geol. Nat. Hist. Surv. **3**: *pl. 32*; McIlv. Am. Fungi *pl. 122, f. 2*; Atk. Stud. Am. Fungi *pl. 49, f. 1*; *pl. 52*; Fries, Sv. Aetl. Svamp. *pl. 52*; Gill. Champ. Fr. *pl. 57*; Sturm, Deuts. Fl. Pilze **5**: *pl. 43*; Palmer, Mushr. Am. *pl. 9, f. 1*; Gibson, Edible Toadst. *pl. 24, f. 12*; Ann. Rep. N. Y. State Mus. **48**: *pl. 43, f. 1–7*; Bull. Herb. Fr. *pl. 379*.
EXSICCATI: Sydow, Myc. Mar. *2733*.

2. **Tylopilus indecisus** (Peck) Murrill, Mycologia **1**: 15. 1909.

Boletus indecisus Peck, Ann. Rep. N. Y. State Mus. **41**: 76. 1888.

Pileus thick, convex, 6–12 cm. broad; surface dry, minutely velvety to glabrous, ochraceous-brown to chestnut, having no violet tint when young; margin entire or undulate: context firm, fleshy, white, unchangeable, except in old specimens, which become slightly greenish-yellow near the tubes when wounded, taste mild; tubes adnate, not conspicuously depressed, white or grayish-white, becoming flesh-colored from the mature spores, usually changing to brownish when wounded, 0.5–1.5 cm. long, mouths small, subcircular: spores oblong, smooth, dirty rose-colored, 12–15 × 4 μ: stipe subequal, subconcolorous, usually reticulate above, minutely furfuraceous, especially below, firm, solid, 6–10 cm. long, 1–2 cm. thick.

TYPE LOCALITY: Menands, New York.
HABITAT: Thin deciduous woods.
DISTRIBUTION: New York to North Carolina and west to Kentucky.
ILLUSTRATION: McIlv. Am. Fungi *pl. 122, f. 1*.

3. **Tylopilus gracilis** (Peck) P. Henn. in E. & P. Nat. Pfl. **1**[1**]: 190. 1897.

Boletus gracilis Peck, Ann. Rep. N. Y. State Mus. **24**: 78. 1872.

Pileus convex, 3–6 cm. broad, rarely larger; surface dry, slightly viscid in wet weather, subtomentose or squamulose, sometimes rimose or reticulate, dull-tan to reddish-brown: context white, unchanging, taste mild, becoming acid; tubes nearly free, depressed, white, becoming deep flesh-colored, not changing when wounded, mouths small, circular: spores ellipsoid, smooth, subferruginous, 12–15 × 5–6 μ: stipe tapering upward, paler and minutely tomentose or hoary above, concolorous, substriate, and furfuraceous below, solid, fleshy, and white within, 6–10 cm. long, 0.5–1.5 cm. thick.

TYPE LOCALITY: Garrisons, New York.
HABITAT: In woods on the ground or on much decayed logs or stumps.
DISTRIBUTION: Nova Scotia to Georgia.
ILLUSTRATION: McIlv. Am. Fungi *pl. 114, f. 1*.

4. **Tylopilus alboater** (Schw.) Murrill, Mycologia **1**: 16. 1909.

Boletus alboater Schw. Schr. Nat. Ges. Leipzig **1**: 95. 1822.
Boletus nigrellus Peck, Ann. Rep. N. Y. State Mus. **29**: 44. 1878. (Type from New York.)

Pileus convex, solitary or gregarious, 6–10 cm. broad, 2 cm. thick; surface pruinose to tomentose, very dark-brown to black; margin rather thick, involute when young: context white, changing to pinkish-gray when wounded, taste nutty; tubes adnate, slightly depressed, pale-gray to flesh-colored, changing slowly to black or reddish-black when wounded, 1 cm. long, mouths small, irregularly circular: spores oblong-ellipsoid, smooth, pointed at one end, dull flesh-colored, 10–12 × 4–6 μ: stipe short, subequal, even, concolor-

ous or a little paler than the pileus, pinkish-gray at the apex, velvety at the base, solid, 5–8 cm. long, 1.5–2.5 cm. thick.

TYPE LOCALITY: North Carolina.
HABITAT: In open deciduous woods.
DISTRIBUTION: New York to Georgia and Mississippi.

3. CERIOMYCES Batt. Fung. Hist. *pl. 29*. 1755.

Leccinum S. F. Gray, Nat. Arr. Brit. Pl. 1: 646. 1821.
Tubiporus P. Karst. Rev. Myc. 3[9]: 16. 1881.
Krombholzia P. Karst. Rev. Myc. 3[9]: 17. 1881. Not *Krombholzia* Rupr. 1842.
Versipellis Quél. Ench. Fung. 157. 1886.
Ixocomus Quél. Myc. Fl. Fr. 411. 1888.
Xerocomus Quél. Myc. Fl. Fr. 417. 1888.

Hymenophore annual, terrestrial, centrally stipitate; surface dry, rarely viscid, glabrous or variously ornamented: context usually white or yellow, sometimes tinged with certain other colors, very rarely poisonous; tubes free or adnate, small, cylindric, sometimes large and angular near the stipe: spores oblong-ellipsoid, smooth, ochraceous to yellowish-brown: stipe solid, except in one or two species, even or reticulate, exannulate.

Type species, *Ceriomyces crassus* Batt.

Stem shaggy and lacerate, with reticulate furrows.
  Pileus dry, tomentose or reddish-pilose. 1. *C. Russellii.*
  Pileus viscid, glabrous. 2. *C. Betula.*
Stem smooth or reticulate with veins.
  Tubes white, not stuffed when young and not turning blue when wounded, colored at maturity with the yellowish-brown spores; pileus glabrous (a few subtomentose species have whitish tubes when young).
    Stem smooth; pileus white, smooth. 3. *C. albellus.*
    Stem reticulate.
      Pileus white, with deep chinks forming areolae. 4. *C. frustulosus.*
      Pileus gray, smooth. 5. *C. griseus.*
    Stem scabrous; pileus smooth, rarely white.
      Stem conspicuously bright-yellow near the base. 6. *C. chromapes.*
      Stem entirely white or grayish-white. 7. *C. viscidus.*
  Tubes flesh-colored; pileus glabrous, floccose or squamulose.
    Pileus glabrous. 8. *C. griseo-roseus.*
    Pileus adorned with appressed yellowish flocci. 9. *C. conicus.*
    Pileus adorned with conspicuous dark-purple scales. 10. *C. Vanderbiltianus.*
  Tubes bright-yellow, sometimes tinged with scarlet, unchanging at maturity or in dried specimens.
    Stem smooth; pileus glabrous.
      Stem 2 cm. thick; spores $15 \times 6\ \mu$. 11. *C. flaviporus.*
      Stem less than 1 cm. thick; spores $10 \times 4\ \mu$. 12. *C. auriporus.*
    Stem reticulate; pileus and stem covered with a bright-yellow or scarlet tomentum or pulverulence. 13. *C. auriflammeus.*
  Tubes some shade of yellow or brown, usually becoming darker with age (in *C. fumosipes*, *C. sordidus*, and *C. Roxanae*, the tubes are whitish when young).
    Parasitic on species of *Scleroderma*. 14. *C. parasiticus.*
    Found in clusters on roots and stumps of pine; pileus bright golden-yellow. 15. *C. hemichrysus.*
    Found on the ground, rarely on wood much decayed and then not in clusters.
      Tubes stuffed when young, their mouths usually white; pileus usually glabrous.
        Stem furfuraceous, lilac-gray; pileus and tubes chocolate-brown. 16. *C. eximius.*
        Stem smooth or reticulate; pileus and tubes of lighter color than above.
          Spores brownish-ochraceous, $13–15 \times 4–5\ \mu$; stem more or less reticulate. 17. *C. crassus.*
          Spores ferruginous-ochraceous, $9–12 \times 4–5\ \mu$; stem rarely reticulate at the top; pileus often olivaceous and spotted. 18. *C. affinis.*
Tubes not stuffed when young.
  Pileus distinctly viscid, glabrous, yellow, sometimes more or less reddish-brown; stem not reticulate.
    Tubes brick-colored, flesh peppery; stem solid, yellow at the base. 19. *C. ferruginatus.*
    Tubes yellow, flesh mild.
      Stem hollow, glabrous. 20. *C. Curtisii.*
      Stem solid, dotted with yellow or red glandules. 21. *C. inflexus.*
      Stem solid, not dotted. 22. *C. Atkinsonianus.*

Pileus glabrous or subtomentose, not viscid.
Stem reticulate, usually very distinctly so.
Pileus, tubes, and stem tawny-brown. 23. *C. tabacinus.*
Pileus red.
Context changing to blue when wounded.
Stem bright lemon-yellow throughout; pileus without a bloom. 24. *C. speciosus.*
Stem red below, yellow above; pileus with a bloom. 25. *C. Peckii.*
Context not changing to blue when wounded.
Pileus chocolate-red, 3–4 cm. broad. 26. *C. Housei.*
Pileus testaceous, fading to ochraceous, 5–11 cm. broad. 27. *C. subsanguineus.*
Pileus yellow or brown, tubes yellowish.
Temperate species.
Tubes large; pileus subtomentose. 28. *C. illudens.*
Tubes of medium size; pileus usually glabrous.
Stipe white; pileus avellaneous-isabelline, very light in weight. 29. *C. subpallidus.*
Stipe yellow or yellowish-brown.
Context yellow; spores 11–14 μ long. 30. *C. retipes.*
Context white, tinged with pink; spores 7–9 μ long. 31. *C. alabamensis.*
Tropical species.
Pileus 2–3 cm. broad, floccose-tomentose. 32. *C. guadelupensis.*
Pileus 7 cm. broad, glabrous. 33. *C. Maxoni.*
Stem not reticulate.
Pileus glabrous.
Pileus red.
Stem yellow, sometimes with red stains; entire plant quickly changing to blue at any point where touched. 34. *C. miniato-olivaceus.*
Stem red, yellow at the top; flesh and tubes slowly turning blue when wounded. 35. *C. bicolor.*
Pileus yellow or brown.
Tubes changing to blue when wounded; stem glabrous. 36. *C. pallidus.*
Tubes not changing to blue when wounded.
Stem furfuraceous, pale-yellow; tubes pale-yellow to greenish-yellow. 37. *C. subglabripes.*
Stem rough, with minute, stiff, black hairs; tubes brown to black. 38. *C. scabripes.*
Pileus subtomentose; flesh usually spongy and drying readily.
Tubes not changing to blue when wounded.
Tubes whitish, becoming yellow; mouths small, circular. 39. *C. Roxanae.*
Tubes yellow; mouths large and angular, especially near the stem. 40. *C. subtomentosus.*
Tubes small, yellowish, becoming brick-red on drying or when bruised: pileus large, 9–13 cm. in diameter and 3 cm. thick. 41. *C. tomentipes.*
Tubes changing to blue when wounded.
Tubes at first grayish-white, discolored later by the spores; stem bluish-green at the top.
Pileus conspicuously reticulate-rimose. 42. *C. fumosipes.*
Pileus not reticulate-rimose. 43. *C. sordidus.*
Tubes yellow and large; stem and pileus usually red, the latter often cracked. 44. *C. communis.*

1. **Ceriomyces Russellii** (Frost) Murrill, Mycologia **1**: 144. 1909.

Boletus Russellii Frost, Bull. Buffalo Soc. Nat. Sci. **2**: 104. 1874.

Pileus convex, 3–7 cm. broad, 2–3 cm. thick; surface dry, slightly viscid when moist, clothed with a thick tomentum, agglutinated in raised squamules, presenting a reticulate appearance, often rimose-areolate, light-brown to isabelline with brown patches: context thin, cremeous, unchanging, taste mild, slightly salty; tubes plane, adnate or very slightly sinuate, depressed, cremeous when young, dark-flavous with a tinge of green at maturity, mouths large, angular, uniform, edges thin: spores ellipsoid, distinctly longitudinally striate, olivaceous, 15–17 $\times$ 7–8 μ: stipe long and slender, tapering upward, very coarsely reticulate and fluted, the margins broad and lacerate, swelling in wet weather, somewhat glutinous even in dry weather, bright-pinkish flesh-colored throughout, the depressions usually not darker, firm, solid, or slightly stuffed, yellow within, 5–12 cm. long, 1–1.5 cm. thick at the base.

TYPE LOCALITY: New England.
HABITAT: Open deciduous woods.
DISTRIBUTION: New England to Mississippi and west to Wisconsin.
ILLUSTRATION: McIlv. Am. Fungi *pl. 118, f. 2.*

2. **Ceriomyces Betula** (Schw.) Murrill, Mycologia **1**: 144. 1909.

Boletus Betula Schw. Schr. Nat. Ges. Leipzig 1: 90. 1822.
Boletus Morgani Peck, Bull. Torrey Club 10: 73. 1883. (Type from Kentucky.)

Pileus hemispheric, 3–9 cm. broad, 1–2 cm. thick; surface smooth, viscid, shining, perfectly glabrous, latericeous to almost luteous; margin acute, paler: context whitish, tinged with red or yellow, becoming reddish when bruised, slightly acid, not bitter; tubes nearly free, depressed at times, flavous, becoming darker at maturity, changing to greenish-yellow when wounded, mouths large, subcircular, somewhat unequal: spores melleous to olive-brown, papillate, oblong-ellipsoid, 16–20 × 7–9 μ: stipe tapering upward at the base, very long, pitted with long narrow depressions, giving it a shaggy appearance, flavous above and along the ridges, dull-purplish below, especially in the depressions, flesh solid, white or yellow with purplish tints, 10–20 cm. long, 0.5–1.5 cm. thick.

TYPE LOCALITY: North Carolina.
HABITAT: Rocky deciduous woods.
DISTRIBUTION: North Carolina to Alabama and west to Tennessee, Ohio, and Kentucky.
ILLUSTRATION: Bull. Torrey Club 10: *pl. 35.*

3. **Ceriomyces albellus** (Peck) Murrill, Mycologia **1**: 145. 1909.

Boletus albellus Peck, Ann. Rep. N. Y. State Mus. 41: 77. 1888.

Pileus circular, convex, subcespitose, 2–4 cm. broad; surface white or grayish-white with more or less bloom, sometimes pale avellaneous-isabelline, occasionally violet-gray when young, glabrous or subglabrous, dry; margin thin, regular, fertile, concolorous: context white or whitish, tinged with yellow at times, unchangeable; tubes plane, adnate, slightly depressed at times, rather short, white, violet-gray at times when young, becoming pale-yellow and sometimes darker-yellow from the maturing of the spores, mouths small, nearly circular, regular, edges rather thick, entire: spores oblong-ellipsoid, brownish-ochraceous, 14–16 × 5–6 μ: stipe central, cylindric, equal, sometimes thickened at the base, white or whitish, glabrous or nearly so, usually distinctly reticulate in the upper half, but rarely smooth or somewhat striate except at the very top, 3–5 cm. long, 5–10 mm. thick.

TYPE LOCALITY: Sandlake, New York.
HABITAT: Deciduous woods.
DISTRIBUTION: New York to Virginia and Tennessee.

4. **Ceriomyces frustulosus** (Peck) Murrill, Mycologia **1**: 145. 1909.

Boletus frustulosus Peck, Bull. Torrey Club 24: 146. 1897.

Pileus thick, convex or nearly plane, 2.5–5 cm. broad; surface white or whitish, subglabrous, rimosely areolate, the areolae unequal and appearing like frustra of polygonal pyramids: context whitish, unchanging; tubes depressed, whitish, becoming pale-brown, equaling the thickness of the context: spores fusiform, smooth, yellowish-brown, 15–18 × 4–6 μ: stipe equal, whitish, reticulate above and sometimes nearly or quite to the base, solid, 2.5–5 cm. long, 1–2 cm. thick.

TYPE LOCALITY: Ocean Springs, Mississippi.
HABITAT: Open ground and clay banks.
DISTRIBUTION: Mississippi and Alabama.

5. **Ceriomyces griseus** (Frost) Murrill, Mycologia **1**: 145. 1909.

Boletus griseus Frost; Peck, Ann. Rep. N. Y. State Mus. 29: 45. 1878.
Boletus flexuosipes Peck, Bull. N. Y. State Mus. 8: 130. 1889. (Type from North Carolina.)

Pileus broadly convex, 5–10 cm. in diameter; surface subglabrous, smooth, dry, light- or dark-gray, rarely slightly brownish: context firm, whitish or grayish, yellowish in spots, unchanging; tubes adnate, slightly depressed, somewhat decurrent at times, pure-white or whitish, becoming brownish with age and darker when bruised: spores ellipsoid, smooth, ochraceous-brown, 9-14 × 4–5 μ: stipe flexuous, whitish or yellowish, changing to brown

when bruised, rarely reddish toward the base, distinctly reticulate, firm, stuffed, becoming hollow at times, 5–10 cm. long, 0.5–1.3 cm. thick.

TYPE LOCALITY: Sandlake, New York.
HABITAT: On the ground in open woods.
DISTRIBUTION: New England to North Carolina.

6. **Ceriomyces chromapes** (Frost) Murrill, Mycologia 1: 145. 1909.

Boletus chromapes Frost, Bull. Buffalo Soc. Nat. Sci. 2: 105. 1874.

Pileus convex to expanded, 4–8 cm. broad, 1 cm. or more thick; surface slightly tomentose, the fine, tangled fibers very distinct under a lens, pale-tan to rosy-isabelline or pale-red; margin acute to somewhat obtuse, concolorous: context white, unchanging, taste mild; tubes free or slightly attached, creamy-white to pale-brown or reddish-brown, becoming flesh-colored and finally brownish with age, mouths small, subcircular, concolorous; spores oblong-ellipsoid, smooth, subhyaline, 11–14 × 4–5 μ: stipe equal, tapering above, pallid or pinkish with red or brown scales, bright-yellow at the base, rarely entirely yellow, sometimes faintly reticulate above, solid, bright-yellow within, especially at the base, 6–9 cm. long, 1–1.5 cm. thick.

TYPE LOCALITY: Brattleboro, Vermont.
HABITAT: In open woods.
DISTRIBUTON: Nova Scotia to Georgia and Mississippi.
ILLUSTRATIONS: Atk. Stud. Am. Fungi *pl. 53*; Bull. Conn. Geol. Nat. Hist. Surv. 3: *pl. 31*.

7. **Ceriomyces viscidus** (L.) Murrill.

Boletus viscidus L. Sp. Pl. 1177. 1753.
Boletus scaber Bull. Herb. Fr. *pl. 132, f. 1.* 1782.
Boletus aurantiacus Bull. Herb. Fr. *pl. 236.* 1784.
Boletus niveus Fries, Obs. Myc. 1: 111. 1815.
Leccinum aurantiacum S. F. Gray, Nat. Arr. Brit. Pl. 1: 646. 1821.
Leccinum scabrum S. F. Gray, Nat. Arr. Brit. Pl. 1: 647. 1821.
? *Boletus versipellis* Fries, Boleti 13. 1835.
Krombholzia scabra P. Karst. Rev. Myc. 3[9]: 17. 1881.
Gyroporus scaber Quél. Ench. Fung. 162. 1886.
Ceriomyces scaber Murrill, Mycologia 1: 146. 1909.

Pileus convex, thick, fleshy, 4–10 cm. broad, 1.5–3 cm. thick; surface smooth, glabrous or minutely tomentose, slightly viscid when moist, varying in color from white to shades of brown or red; margin thick, subacute, sometimes appendiculate: context 1.5 cm. thick at the center, white or whitish, becoming flesh-colored or slightly darker when bruised, taste mild; tubes long, slender, free or nearly so, depressed, white or greenish-yellow, becoming brownish with age and flesh-colored or blackish when bruised, mouths circular, edges thin: spores oblong, smooth, snuff-brown, 13–16 × 4–6 μ: stipe firm, solid, tapering upward, bulbous at the base, whitish, especially above, brownish-cinereous below, roughened with numerous reddish or brownish dots or scales, 5–15 cm. long, 1–2 cm. thick.

TYPE LOCALITY: France.
HABITAT: In and near woods.
DISTRIBUTION: Temperate North America and Europe.
ILLUSTRATIONS: Palmer, Mushr. Am. *pl. 7, f. 3*; Fries, Sv. Aetl. Svamp. *pl. 14*; Hussey, Ill. Brit. Myc. 1: *pl. 57*; Gibson, Edible Toadst. *pl. 21*; Barla, Champ. Nice *pl. 35*; Ann. Rep. N. Y. State Mus. 48: *pl. 35, f. 1–9*; Gill. Champ. Fr. *pl. 77, 78*; Sow. Engl. Fungi *pl. 175*; Richon & Roze, Atl. Champ. *pl. 54*; Mycologia 1: *pl. 1, f. 5*.
EXSICCATI: Herpell, Präp. Hutpilze *134, 135*; Clements, Crypt. Form. Colo. *342*; Cavara, Fungi Longob. *65*; Sydow, Myc. Mar. *1412*.

8. **Ceriomyces griseo-roseus** Murrill, sp. nov.

Pileus irregularly convex, 7 cm. broad; surface even, slightly viscid when moist, light grayish flesh-colored; margin thin, entire, fertile: context white, unchanging, mild; tubes concolorous, slightly sinuate, nearly plane in mass, mouths small, angular, edges thin: spores oblong-ellipsoid, almost rod-shaped, with rounded ends, smooth, yellowish-brown, 11–13 × 2.5–3 μ: stipe concolorous, tapering upward, somewhat fibrous, subglabrous, even, hollow or stuffed, 7.5 cm. long, nearly 2 cm. thick.

Type collected near Mobile, Alabama, July 22, 1897, *C. F. Baker*.
DISTRIBUTION: Known only from type locality.

9. **Ceriomyces conicus** (Rav.) Murrill, Mycologia **1**: 146. 1909.

Boletus conicus Rav.; Berk. & Curt. Ann. Mag. Nat. Hist. II. **12**: 430. 1853.

Pileus convex or subconic, 2.5–5 cm. broad; surface clothed with fasciculate, appressed, yellowish flocci: context white, unchangeable, tasteless; tubes ventricose, flesh-colored, becoming darker at the maturity of the spores, mouths small, angular, edges subfimbriate: spores fusiform, smooth, subferruginous, 14–16 × 5–6 μ: stipe tapering upward, pale-yellow, glabrous, not reticulate, 5 cm. long, 12 mm. thick.

TYPE LOCALITY: South Carolina.
HABITAT: Damp pine woods.
DISTRIBUTION: Known only from the type collection.

10. **Ceriomyces Vanderbiltianus** Murrill, Mycologia **1**: 146. 1909.

Boletus Vanderbiltianus Murrill, Torreya **8**: 215. 1908.

Pileus subconic, 2–3 cm. broad, 1–2 cm. thick; surface smooth, dry, conspicuously ornamented on the umbo with dense, pointed, imbricate, dark-purple scales, which become gradually smaller and give place to minute purplish specks near the margin, the color changing from atropurpureous to latericeous; margin thin, undulate, pale-roseous, with a distinct inflexed sterile portion 1 mm. broad: context thick, fleshy, firm, cream-colored, unchangeable, taste sweet or very slightly bitter; tubes adnate, the longest not over 4 mm., salmon-colored near the margin, incarnate as the spores mature, mouths angular, 1 mm. or less broad, elongate to 2 mm. near the stipe, edges thin, entire: spores oblong-ellipsoid, smooth, pale ochraceous-brown, 9–12 × 2–3 μ: stipe curved, cylindric, slightly enlarged above, even, delicately pruinose to glabrous, deep salmon-colored, changing to incarnate, darker on bruising, lighter above with a slight glaucous bloom, finely purplish-dotted like the margin of the cap, solid and cream-colored within, 2–3 cm. long, 0.5–0.8 cm. thick.

TYPE LOCALITY: Pink Bed Valley, North Carolina.
HABITAT: By the roadside in thin oak woods.
DISTRIBUTION: Known only from the type locality.

11. **Ceriomyces flaviporus** (Earle) Murrill, Mycologia **1**: 147. 1909.

Boletus flaviporus Earle, Bull. N. Y. Bot. Gard. **3**: 297. 1905.

Pileus rather thin, convex to expanded, 6–9 cm. broad; surface smooth, viscid, not glutinous, shining, chestnut-brown: context whitish to brownish, unchanging, taste mild; hymenium plane, tubes usually deeply depressed, but decurrent for nearly 1 cm. in anastomosing lines, bright lemon-yellow when young, becoming deep-yellow or flavid with age and retaining this color in dried specimens, mouths small, 1 mm. broad, angular, edges thin: spores narrowly ellipsoid, smooth, yellow, 15 × 6 μ: stipe subequal or slightly ventricose, yellowish and smooth or marked with glutinous granules above, tomentose and white stained with brick-red below, solid, 6–9 cm. long, 1.8 cm. thick.

TYPE LOCALITY: Stanford University, California.
HABITAT: Among decaying oak leaves.
DISTRIBUTION: Known only from the type locality.

12. **Ceriomyces auriporus** (Peck) Murrill, Mycologia **1**: 147. 1909.

Boletus auriporus Peck, Ann. Rep. N. Y. State Cab. **23**: 133. 1872.
Boletus innixus Frost, Bull. Buffalo Soc. Nat. Sci. **2**: 103. 1874. (Type from Vermont.)
Boletus caespitosus Peck, Bull. Torrey Club **27**: 17. 1900. (Type from Virginia.)

Pileus circular, plano-convex, 2–4 cm. broad, 0.5–1 cm. thick; surface reddish-brown or yellowish-brown, rarely grayish-brown, sometimes brown with a reddish-yellow tint or reddish-brown in the center and olivaceous toward the margin, glabrous or minutely tomentose, slightly areolate at times with age, the interstices appearing yellow, usually dry, but somewhat viscid in wet weather; margin even, thin, somewhat obtuse, slightly inflexed on drying, concolorous: context firm, fleshy, 3–5 mm. thick, white, unchangeable, tinged with red under the cuticle, at first mild, then unpleasant to the taste, the cuticle decidedly acid; tubes plane or convex, adnate or nearly free, with a broad shallow depression about the stipe, 3–5 mm. long, bright golden-yellow, unchanging, even after years in the herbarium,

mouths concolorous, variable in size, small and circular when young, medium or large and irregularly polygonal when old, edges thin, entire: spores oblong-ellipsoid, curved at one end, lemon-yellow, 8–10 × 4–5 μ: stipe central, short, slender, curved, tapering upward, nearly glabrous, pulverulent under a lens, slimy in wet weather, concolorous or paler, slightly striate above from the decurrent edges of the tubes, solid, white or discolored-yellowish tinged with red within, 2–4 cm. long, 4–8 mm. thick.

TYPE LOCALITY: North Elba, New York.
HABITAT: Thin dry woods and shaded roadsides.
DISTRIBUTION: New England to Alabama.

13. **Ceriomyces auriflammeus** (Berk. & Curt.) Murrill, Mycologia **1**: 147. 1909.

Boletus auriflammeus Berk. & Curt. Grevillea 1: 36. 1872.

Pileus convex to expanded, 6–8 cm. broad, 1–2 cm. thick; surface dry, slightly viscid after a rain, tomentose, bright-yellow, sometimes partially covered with a scarlet pulverulence; margin thin, entire: context white, unchangeable, somewhat colored just beneath the pellicle, not bitter; tubes plane or convex, adnate, radially elongate near the stipe, decurrent, greenish-yellow, mouths angular, usually slightly scarlet when looked at sidewise, especially in dried plants, rarely conspicuously scarlet over most of the hymenium: spores pale-yellow, smooth, oblong-ellipsoid, 9–11 × 3–4 μ: stipe enlarged above, usually tapering below, but sometimes bulbous, very variable in size, 5–9 cm. long, 0.5–1 cm. thick, colored and clothed like the pileus, distinctly and beautifully reticulate, sometimes entirely to the base.

TYPE LOCALITY: North Carolina.
HABITAT: Thin soil in deciduous woods.
DISTRIBUTION: New York, Pennsylvania, Kentucky, and North Carolina.

14. **Ceriomyces parasiticus** (Bull.) Murrill, Mycologia **1**: 148. 1909.

Boletus parasiticus Bull. Herb. Fr. *pl. 451, f. 1.* 1789.
Versipellis parasitica Quél. Ench. Fung. 159. 1886.
Xerocomus parasiticus Quél. Fl. Myc. Fr. 418. 1888.

Pileus convex to expanded, 5–8 cm. broad; surface dry, finely tomentose to glabrous, becoming tessellately rimose, dingy-yellow or cinereous: context whitish; tubes decurrent, of medium size, golden-yellow: spores fusiform, smooth, pale-brownish, 12–15 × 4 μ: stipe incurved, glabrous, solid, yellow without and within, 4–10 cm. long, 0.5–1 cm. thick.

TYPE LOCALITY: France.
HABITAT: Parasitic on species of *Scleroderma*.
DISTRIBUTION: New England and New York; also in Europe.
ILLUSTRATIONS: Bull. Herb. Fr. *pl. 451, f. 1;* Sturm, Deuts. Fl. Pilze 5²: *pl. 7;* Gill. Champ. Fr. *pl. 70;* Boudier, Ic. Myc. 1: *pl. 145.*
EXSICCATI: Sydow, Myc. Mar. *809;* Jacz. Fungi Rossiae *126.*

15. **Ceriomyces hemichrysus** (Berk. & Curt.) Murrill, Mycologia **1**: 148. 1909.

Boletus hemichrysus Berk. & Curt. Ann. Mag. Nat. Hist. II. 12: 429. 1853.—Grevillea 1: 35. 1872.

Pileus convex, becoming plane or slightly depressed, 3–7 cm. broad; surface floccose-squamulose, golden-yellow, pulverulent, at times rimose: context thick, yellow, sometimes slightly changing to blue when wounded; tubes adnate or decurrent, yellow, becoming reddish-brown, mouths large, angular: spores oblong-ellipsoid, smooth, pale yellowish-brown, 7–9 × 2–3 μ: stipe short, irregular, tapering below, yellowish-pulverulent, tinged with red, yellow within, 3 cm. long, 0.5–1 cm. thick.

TYPE LOCALITY: South Carolina.
HABITAT: On roots or stumps of species of pine.
DISTRIBUTION: New York, New Jersey, North Carolina, South Carolina, and Alabama.

16. **Ceriomyces eximius** (Peck) Murrill, Mycologia **1**: 148. 1909.

Boletus robustus Frost, Bull. Buffalo Soc. Nat. Sci. 2: 104. 1874. Not *B. robustus* Fries, 1851.
Boletus eximius Peck, Jour. Myc. 3: 54. 1887.

Pileus thick, compact, globose when young, becoming convex at maturity, 8–20 cm. broad; surface dry, smooth, subglabrous, slightly viscid when wet, purplish-brown, smoky-

red or chocolate-brown, at times lilac-tinted, darker when bruised; margin entire, concolorous: context firm, gray or slightly reddish, sometimes nearly pure-white, changing to pale flesh-colored, taste mild; tubes adnate, at length depressed, nearly plane, colored nearly like the pileus, becoming deep chocolate-brown with age, mouths minute, subcircular, stuffed when young: spores oblong, smooth, brownish-ferruginous, 11–15 × 4–6 μ: stipe cylindric, subequal, solid, minutely squamulose or coarsely granular, slightly paler than the pileus, greenish-purple within, 5–14 cm. long, 1–3 cm. thick.

TYPE LOCALITY: Brattleboro, Vermont.
HABITAT: Thin woods, especially on roadside banks.
DISTRIBUTION: Nova Scotia to North Carolina and west to Kentucky.
ILLUSTRATION: Bull. N. Y. State Mus. **10**: *pl. 80, f. 6–12.*

17. **Ceriomyces crassus** Batt. Fung. Hist. 62. 1755.

Agaricus bulbosus Schaeff. Fung. Bavar. **2**: *pl. 134.* 1763.
Boletus edulis Bull. Herb. Fr. *pl. 60.* 1781.
Boletus esculentus Pers. Obs. Myc. **1**: 23. 1794.
Leccinum edule S. F. Gray, Nat. Arr. Brit. Pl. **1**: 647. 1821.
Boletus separans Peck, Ann. Rep. N. Y. State Mus. **25**: 81. 1873. (Type from New York.)
Boletus decorus Frost, Bull. Buffalo Soc. Nat. Sci. **2**: 103. 1874. (Type from Vermont.)
Boletus limatulus Frost, Bull. Buffalo Soc. Nat. Sci. **2**: 104. 1874. (Type from Vermont.)
Boletus variipes Peck, Ann. Rep. N. Y. State Mus. **41**: 76. 1888. (Type from New York.)
Suillus bulbosus Kuntze, Rev. Gen. **3**: 535. 1893.
? *Boletus auripes* Peck, Ann. Rep. N. Y. State Mus. **50**: 107. 1897. (Type from New York.)
Boletus Atkinsoni Peck, Bull. N. Y. State Mus. 94: 20. 1905. (Type from New York.)
Boletus nobilis Peck, Bull. N. Y. State Mus. 94: 48. 1905. (Type from New York.)

Pileus thick, broadly convex, gregarious or cespitose, 6–20 cm. broad, 3–4 cm. thick; surface smooth, glabrous or finely tomentose, subopaque, dry, slightly viscid when moistened, sometimes pitted or reticulate-rimose, varying in color from ochraceous-brown to reddish-brown, sometimes paler; margin acute, entire: context compact, 2–3 cm. thick, unchanging, white or yellowish, sometimes reddish beneath the cuticle, taste sweet and nutty; tubes adnate, at length depressed, plane in mass, white and stuffed when young, yellow or greenish-yellow when mature, changing to greenish-ochraceous when wounded, about 2 cm. long, mouths of medium size, angular, edges thin: spores fusiform, smooth, greenish-yellow to ochraceous-brown, 12–15 × 5–6 μ: stipe subequal or enlarged below, stout, concolorous or considerably paler, becoming bluish or discolored when wounded, wholly or partially reticulate, solid, tough, fibrous, yellowish within, tinged with red at times near the surface, 5–10 cm. long, 3–4 cm. thick.

TYPE LOCALITY: Bavaria.
HABITAT: On the ground in woods.
DISTRIBUTION: Temperate North America and Europe.
ILLUSTRATIONS: Batt. Fung. Hist. *pl. 29;* Schaeff. Fung. Bavar. **2**: *pl. 134;* Bull. Herb. Fr. *pl. 60, 494;* Gill. Champ. Fr. *pl. 56;* Sturm, Deuts. Fl. Pilze **5**: *pl. 36;* Atk. Stud. Am. Fungi *pl. 49, f. 2; pl. 50, 51;* Barla, Champ. Nice *pl. 34;* McIlv. Am. Fungi *pl. 118, f. 5;* Palmer, Mushr. Am. *pl. 7, f. 2;* Gibson, Edible Toadst. *pl. 20;* Fries, Sv. Aetl. Svamp. *pl. 13;* Krombh. Abbild. *pl. 31;* Mem. N. Y. State Mus. **3**: *pl. 65, f. 1–8;* Bull. N. Y. State Mus. 94: *pl. R, f. 1–4;* Ann. Rep. N. Y. State Mus. **48**: *pl. 36, f. 8–12;* **51**: *pl. 54, f. 1–7.*
EXSICCATI: Herpell, Präp. Hutpilze *54;* D. Sacc. Myc. Ital. *405;* Rabenh. Herb. Myc. ed. 2. *302.*

18. **Ceriomyces affinis** (Peck) Murrill, Mycologia **1**: 149. 1909.

Boletus affinis Peck, Ann. Rep. N. Y. State Mus. **25**: 81. 1873.
? *Boletus leprosus* Peck, Bull. N. Y. State Mus. 8: 135. 1889. (Type from North Carolina.)
? *Boletus crassipes* Peck, Bull. Torrey Club **27**: 19. 1900. (Type from Pennsylvania.)

Pileus convex to plane, gregarious or scattered, 5–9 cm. broad; surface glabrous or nearly so, slightly viscid when moist, but usually dry, with a thin, separable cuticle which easily cracks or rubs off in spots, fulvous, pale-chestnut, ochraceous, or somewhat olivaceous; margin rather obtuse, entire, slightly projecting beyond the tubes: context somewhat spongy, white, unchanging or sometimes slowly becoming yellowish, taste mild; tubes adnate to nearly free, about 1 cm. long, white or cremeous, becoming subferruginous when wounded or at the maturity of the spores, mouths somewhat uneven, 2–3 to a mm., subcircular to angular, stuffed when young: spores oblong, smooth, bright ferruginous-ochraceous, 8–12 × 4–5 μ: stipe cylindric, tapering downward, usually slightly eccentric, rarely

reticulate above, glabrous, white above and below, flesh-colored and more or less streaked in the middle, spongy and white within, about 7 cm. long and 1.5 cm. thick.

TYPE LOCALITY: Greenbush, New York.
HABITAT: In thin woods.
DISTRIBUTION: Vermont to North Carolina and west to Indiana.
ILLUSTRATIONS: Ann. Rep. N. Y. State Mus. **49**: *pl. 48, f. 6–16;* Mem. N. Y. State Mus. **3**: *pl. 66, f. 7–14.*

19. **Ceriomyces ferruginatus** (Batsch) Murrill.

Boletus ferruginatus Batsch, Elench. Fung. Contin. 1: 179. 1786.
Boletus piperatus Bull. Herb. Fr. *pl. 451, f. 2.* 1789.
Leccinum piperatum S. F. Gray, Nat. Arr. Brit. Pl. 1: 647. 1821.
Boletus Sistotrema Peck, Ann. Rep. N. Y. State Cab. **23**: 133. 1872.
Viscipellis piperata Quél. Ench. Fung. 157. 1886.
Ixocomus piperatus Quél. Fl. Myc. Fr. 414. 1888.
Ceriomyces piperatus Murrill, Mycologia 1: 150. 1909.

Pileus convex to plane or nearly so, umbonate when young, circular in outline, 2–5 cm. broad, reaching 7 cm. at times; surface smooth, glabrous, sometimes rimose-areolate, slightly viscid in damp weather, varying from ochraceous to fulvous; margin regular, entire, sometimes quite thick because of the lengthening of the marginal tubes: context thickest at the center and gradually thinner toward the margin, yellow or yellowish-white for the most part, but light-pink or roseous next to the layer of tubes, darker when exposed to the air, acrid and peppery, remarkably free from insects; tubes adnate, at length depressed around the stem, latericeous, becoming slightly darker when wounded, tinged with ferruginous at the maturity of the spores, equal to or longer than the thickness of the context, mouths large, angular, unequal: spores subfusiform, ferruginous, 9–11 × 4 μ: stipe central, slender, nearly equal, 2–5 cm. long, 4–5 mm. thick, rarely reaching 7 cm. in length and 8 mm. in thickness, pulverulent, slightly veined above, smooth below, usually somewhat paler than the pileus, citrinous or flavous at the base, solid, fleshy, and yellow within.

TYPE LOCALITY: France.
HABITAT: Woods and open places.
DISTRIBUTION: Northern United States and Canada; also in Europe.
ILLUSTRATIONS: Batsch, Elench. Fung. *pl. 25, f. 128;* Bull. Herb. Fr. *pl. 451, f. 2;* Sturm, Deuts. Fl. Pilze 5^2: *pl. 6;* Fries, Sv. Aetl. Svamp. *pl. 67;* Gill. Champ. Fr. *pl. 71;* Bull. Conn. Geol. Nat. Hist. Surv. **3**: *pl. 33.*
EXSICCATI: Herpell, Präp. Hutpilze *35, 94;* Roum. Fungi Sel. *6705;* P. Karst. Fungi Fenn. *234.*

20. **Ceriomyces Curtisii** (Berk.) Murrill, Mycologia **1**: 150. 1909.

Boletus Curtisii Berk.; Berk. & Curt. Ann. Mag. Nat. Hist. II. 12: 429. 1853.—Grevillea 1: 35. 1872.
Boletus fistulosus Peck, Bull. Torrey Club **24**: 144. 1897. (Type from Alabama.)

Pileus hemispheric, 2–5 cm. broad, 1.5–2 cm. thick; surface glabrous, viscid, golden-yellow, changing to dull-brownish when old, cuticle very tough; margin involute in young specimens: context thin, white, pale-yellow when bruised; tubes adnate to nearly free, plane or subventricose in mass, slightly decurrent, small, 1 cm. long, light salmon-yellow, changing to brownish-yellow, mouths circular, edges thin: spores subellipsoid, smooth, ferruginous, 12–13 × 5–7 μ: stipe subcylindric, slender, attenuated above, straw-colored or bright-yellow, nearly white at the base, viscid, glabrous, polished, reticulate, usually hollow, 2–10 cm. long, 0.5–0.8 cm. thick.

TYPE LOCALITY: South Carolina.
HABITAT: In pine woods.
DISTRIBUTION: Kentucky to South Carolina and Mississippi.

21. **Ceriomyces inflexus** (Peck) Murrill, Mycologia **1**: 150. 1909.

Boletus inflexus Peck, Bull. Torrey Club **22**: 207. 1895.
? *Boletus rubropunctus* Peck, Ann. Rep. N. Y. State Mus. **50**: 109. 1897.—Bull. N. Y. State Mus. 94: *pl. 90, f. 1–9.* (Type from New York.)

Pileus convex, sometimes cespitose, 2.5–4 cm. broad; surface glabrous, viscid when wet, yellow or olivaceous, becoming ochraceous-brown, often reddish on the disk; margin thin, inflexed, concealing the marginal tubes: context white, unchanging, taste mild; tubes adnate, somewhat depressed, yellowish, becoming dingy-yellow with age and somewhat reddish-brown when injured, rather long, mouths 3–4 to a mm., circular, sometimes dotted with reddish granules: spores oblong, smooth, yellowish-brown, 10–12 × 4–5 μ: stipe rather

slender, curved, tapering above, 5–7 cm. long, 0.4–0.8 cm. thick, viscid, reddish-brown with dark fibrils or dots, pale-yellowish above and below, solid, white to pale-yellowish within.

TYPE LOCALITY: Trexlertown, Pennsylvania.
HABITAT: In open woods.
DISTRIBUTION: Connecticut to North Carolina and Kentucky.

22. **Ceriomyces Atkinsonianus** Murrill, sp. nov.

Pileus convex to nearly plane, 9–14 cm. broad, about 2.5 cm. thick; surface smooth, glabrous, viscid when wet, sometimes becoming rimose-areolate, leather-colored to fulvous, often with a pinkish tinge; margin inrolled when young, extending 3 mm. beyond the tubes, entire at first, slightly hoary: context white, becoming pale rose-colored when wounded, sweet to the taste; tubes adnate, plane in mass, becoming slightly depressed near the stem, straw-colored in young plants, not changing when wounded, becoming olivaceous with age owing to the ripening of the spores, mouths small, circular, concolorous, 4–5 to a mm., not stuffed when young, edges thin, entire: spores fusiform, smooth, dark-olivaceous to dull-brownish in mass, 11–13 × 4–5 μ; stipe tapering upward, somewhat bulbous at the base, glabrous, even, subconcolorous, cartilaginous, pale-yellow at the apex, solid, white and unchanging within, about 9–12 cm. long and 1–3 cm. thick.

Type collected on the ground in deciduous woods in Pink Bed Valley, North Carolina, July, 1908, *W. A. Murrill & H. D. House 64.*
DISTRIBUTION: North Carolina and New York.
ILLUSTRATION: Atk. Stud. Am. Fungi *pl. 55, f. 165* (as *Boletus obsonium*).

23. **Ceriomyces tabacinus** (Peck) Murrill, Mycologia **1**: 151. 1909.

Boletus tabacinus Peck, Bull. Torrey Club **23**: 418. 1896.

Pileus convex, 6–12 cm. broad; surface dry, finely tomentose, often becoming rimose-areolate, wood-brown to dark cinnamon-brown: context white, firm, unchanging when wounded, soft and tawny-brown, almost tomentose in texture at maturity, taste mild; tubes sinuate, short, concave or nearly plane in mass, mouths small, angular or subcircular, whitish-stuffed when young, becoming pale yellowish-brown: spores very slender, smooth, pale-yellowish, 12 × 3 μ: stipe at first almost globose, becoming subequal, thick, slightly tapering above, concolorous, reticulate, solid, 4–8 cm. long, 1–3 cm. thick.

TYPE LOCALITY: Alabama.
HABITAT: In red clay, on banks of ditches.
DISTRIBUTION: Alabama.

24. **Ceriomyces speciosus** (Frost) Murrill, Mycologia **1**: 151. 1909.

Boletus speciosus Frost, Bull. Buffalo Soc. Nat. Sci. **2**: 101. 1874.

Pileus thick, compact, subglobose to convex, 7–15 cm. broad; surface glabrous or subglabrous, smooth, slightly moist, red: context firm, lemon-yellow, changing to greenish-blue when wounded and afterwards changing back to yellow, taste nutty; tubes adnate, plane or slightly depressed, lemon-yellow, becoming dingy with age, changing to blue when wounded, mouths small, circular: spores fusiform, smooth, pale ochraceous-brown, 10–12 × 4–5 μ: stipe stout, solid, reticulate, vivid lemon-yellow without and within, slightly reddish at the base at times, 5–10 cm. long, 2–5 cm. thick.

TYPE LOCALITY: Brattleboro, Vermont.
HABITAT: Thin deciduous woods.
DISTRIBUTION: New England to North Carolina and Tennessee.

25. **Ceriomyces Peckii** (Frost) Murrill, Mycologia **1**: 151. 1909.

Boletus Peckii Frost; Peck, Ann. Rep. N. Y. State Mus. **29**: 45. 1878.
Boletus roseotinctus Peck, Bull. Torrey Club **27**: 612. 1900. (Type from North Carolina.)

Pileus rather thick, firm, convex or nearly plane, 4–7 cm. broad; surface dry, subglabrous to pruinose or slightly velvety, pale- or deep-red, usually fading to pale-tan or buff-brown with age or on drying; margin incurved, entire, concolorous: context firm, white or yellowish, bluish when bruised, taste unpleasant; tubes short, adnate or slightly decurrent, nearly plane in mass, yellow, changing to blue when wounded, mouths minute, cir-

cular, edges uneven: spores oblong, smooth, pale ochraceous-brown, 10–12 × 4–5 μ: stipe equal or subventricose, usually yellow above, red or purplish-red below or the entire length, reticulate, especially above, solid, 4–7 cm. long, 0.5–1.2 cm. thick.

TYPE LOCALITY: Sandlake, New York.
HABITAT: Rather open deciduous woods.
DISTRIBUTION: New England to North Carolina and west to Indiana.

26. **Ceriomyces Housei** Murrill, sp. nov.

Pileus convex above, nearly plane below, 3–4 cm. broad, 1 cm. thick; surface smooth, dry, minutely tomentose, chocolate-red with a velvety sheen; margin concolorous above, slightly overlapping the tubes, reddish beneath: context firm, solid, white, unchanging; tubes decurrent, never depressed, clear-yellow when young, dull-yellow with age, not changing when wounded, 2–4 mm. long, mouths of medium size, circular to oblong, never angled, edges thin, entire: spores smooth, oblong-ellipsoid, yellowish, with a large hyaline nucleus, 7–9 × 4–5 μ: stipe central, cylindric, equal, subglabrous, yellow and distinctly reticulate above, dull chocolate-brown below, the base frequently mottled with yellow, solid and unchanging within, 3–5 cm. long, 5–8 mm. thick.

Type collected at the Pink Beds, North Carolina, July 6, 1909, on mossy banks in deciduous thickets, *H. D. House 09, 11.*
DISTRIBUTION: Known only from the type locality.

27. **Ceriomyces subsanguineus** (Peck) Murrill.

Boletus subsanguineus Peck, Bull. Torrey Club 27: 17. 1900.

Pileus convex to plane or slightly depressed, gregarious or cespitose, 5–11 cm. broad, 1–3 cm. thick; surface usually glabrous, somewhat viscid, testaceous, fading to ochraceous or isabelline, rarely pulverulent or partially rimose-areolate; margin obtuse, beveled: context thick, white, firm, changing slightly to very pale-roseous when wounded, slightly harsh or bitterish at first to the taste, but becoming mild; tubes truly adnate, separating slightly in old plants, decurrent, 5–7 mm. long, pale-yellowish, becoming brownish to purplish when bruised, mouths of medium size, edges thin: spores oblong-ovoid, smooth, very pale-yellowish, 8–9 × 3.5–4.5 μ: stipe rather short, thick, tapering downward to a small radicate base, 4–7 cm. long, 1–2 cm. thick, nearly white, finely scurfy, sometimes reddish-dotted, flavous and reticulate above, solid, firm and white within.

TYPE LOCALITY: Philadelphia, Pennsylvania.
HABITAT: Under beech trees.
DISTRIBUTION: Pennsylvania and New Jersey.

28. **Ceriomyces illudens** (Peck) Murrill.

Boletus illudens Peck, Ann. Rep. N. Y. State Mus. 50: 108. 1897.

Pileus convex, 3–7 cm. broad; surface dry, finely tomentose, yellowish-brown or grayish-brown, sometimes slightly tinged with red, especially in the center: context whitish or yellowish, rather spongy; tubes plane or convex in mass, adnate, bright-yellow, mouths large, angular or subcircular, usually larger near the stipe: spores oblong or subfusiform, olive-green fading to yellowish-brown tinged with green, 11–13 × 4–5 μ: stipe nearly equal, usually tapering at the base, glabrous, whitish or yellowish, 3–5 cm. long, 5–10 mm. thick, coarsely reticulate entirely to the base in fully developed specimens, but only at the top in small plants.

TYPE LOCALITY: Port Jefferson, New York.
HABITAT: Woods and copses.
DISTRIBUTION: Vermont to Alabama.

29. **Ceriomyces subpallidus** Murrill, sp. nov.

Pileus hemispheric, only slightly expanding, 5 cm. broad, 2 cm. thick; surface dry, smooth, glabrous, feeling very much like soft kid, avellaneous-isabelline, not becoming white-spotted nor having a separable pellicle; margin entire, fertile, the tubes slightly projecting: context milk-white, entirely unchanging, very light in weight, spongy-fleshy; tubes yellow or greenish-yellow within, equaling the thickness of the context, adnate,

plane in mass, becoming somewhat depressed next to the stipe, mouths dark-melleous, becoming browner with age, slightly angular, of medium size: spores fusiform, smooth, pale-ochraceous under a microscope from dried specimens, 10–12 × 4–5 μ: stipe cylindric, equal, curved at the base, white, delicately but distinctly reticulate nearly to the base, slightly pruinose, solid, white and unchanging within, about 5 cm. long and 1 cm. thick.

Type collected in Pink Bed Valley, North Carolina, 1000 meters, on the ground in oak-chestnut woods, July, 1908, *W. A. Murrill & H. D. House 63.*
DISTRIBUTION: Known only from the type locality.

30. **Ceriomyces retipes** (Berk. & Curt.) Murrill, Mycologia **1**: 151. 1909.

Boletus retipes Berk. & Curt. Grevillea 1: 36. 1872.
Boletus ornatipes Peck, Ann. Rep. N. Y. State Mus. **29**: 67. 1878. (Type from New York.)

Pileus convex above, concave or plane beneath, rarely cespitose, 5–12 cm. broad, 1–2 cm. thick, surface dry, opaque, somewhat viscid when wet, minutely tomentose to glabrous, sometimes covered with a yellow pulverulence, varying in color from yellow or yellowish-brown to fuliginous: context firm, light- to deep-yellow, unchanging, mild or slightly bitter; tubes adnate, slightly decurrent, somewhat depressed with age, 1 cm. or more long, clear lemon-yellow when young, becoming dull-yellow at maturity, darker with age, but not changing when wounded, mouths circular to angular, less than 1 mm. broad, slightly flesh-colored when bruised: spores oblong, smooth, yellowish-brown, 11–14 × 3–4.5 μ: stipe subequal, often bulbous at the base, distinctly and beautifully reticulate, sometimes entirely to the base, yellowish-pulverulent in some specimens, yellow and firm within, yellow or yellowish-brown without, 5–12 cm. long, 0.5–2 cm. thick.

TYPE LOCALITY: North Carolina.
HABITAT: In thin woods.
DISTRIBUTION: Nova Scotia to Alabama and west to Wisconsin.
ILLUSTRATIONS: Atk. Stud. Am. Fungi *f. 162*; Bull. N. Y. State Mus. 10: *pl. 80, f. 1–5.*

31. **Ceriomyces alabamensis** Murrill, sp. nov.

Pileus plane when expanded, solitary, 7 cm. broad; surface smooth, glabrous, yellowish-brown, with partially separable cuticle; margin thin, fertile, subentire: context white, tinged with pink; tubes adnate, decurrent, yellowish when young, stained brown with the spores at maturity, mouths rather large, angular, irregular: spores oblong-ellipsoid, smooth, yellowish-brown, 7–9 × 3–4 μ: stipe eccentric, flexuous, slightly tapering below, 7 cm. long, 1.3 cm. thick, concolorous, glabrous, reticulate above with brown lines.

Type collected near Auburn, Alabama, July, 1896, *L. M. Underwood & F. S. Earle.*
DISTRIBUTION: Known only from the type locality.

32. **Ceriomyces guadelupensis** (Pat.) Murrill.

Boletus guadelupensis Pat. Bull. Soc. Myc. Fr. 16: 177. 1900.

Pileus small, fleshy, convex, 2–3 cm. broad; surface chestnut-brown, very finely tomentose, adorned with short, erect, floccose filaments; margin incurved, thin, appendiculate, paler: context thin, yellowish, reddish beneath the cuticle; tubes short, yellowish-brown, mouths small, angular: spores very long, oblong-ovoid, smooth, rounded at the apex, apiculate at the base, ochraceous, 1- or 2-guttulate, 16–20 × 6–8 μ; cystidia prominent, cylindric, yellow: stipe slender, ventricose, yellow, with red striations, marked with fine, close ribs.

TYPE LOCALITY: Guadeloupe.
HABITAT: On decayed wood.
DISTRIBUTION: Known only from the type locality.

33. **Ceriomyces Maxoni** Murrill, Mycologia **1**: 219. 1909.

Pileus irregularly circular in outline, convex, slightly depressed, 7 cm. broad, 1–1.5 cm. thick; surface glabrous, smooth, very dark-brown, almost black near the margin, slightly lighter at the center with dark blotches, margin undulate, involute: context very

fleshy; hymenium strongly concave, pure creamy-white, tubes adnate, rather short, small, angular, thin-walled, edges becoming lacerate: spores oblong-ellipsoid, smooth, hyaline, 2-guttulate, 9–11 × 3–4 μ: stipe central, thick, tapering downward, 2.5 cm. long, 3 cm. thick above, 1.5 cm. thick at the base, smooth and glabrous below, closely and conspicuously reticulate above, fleshy, solid.

TYPE LOCALITY: Coliblanco, Costa Rica.
HABITAT: Among mosses on a rotten log.
DISTRIBUTION: Known only from the type locality.

34. **Ceriomyces miniato-olivaceus** (Frost) Murrill, Mycologia **1**: 152. 1909.

Boletus miniato-olivaceus Frost, Bull. Buffalo Soc. Nat. Sci. **2**: 101. 1874.
Boletus sensibilis Peck, Ann. Rep. N. Y. State Mus. **32**: 33. 1880. (Type from New York.)
Boletus glabellus Peck, Ann. Rep. N. Y. State Mus. **41**: 76. 1888. (Type from New York.)

Pileus firm, convex, becoming nearly plane and somewhat spongy with age, cespitose, 5–15 cm. broad; surface finely tomentose to glabrous, sometimes rimose-areolate, vermilion, becoming olivaceous or ochraceous-red, changing to blue when handled; margin acute, slightly exceeding the pores: context pale-yellow, changing immediately to blue when wounded, mild or slightly unpleasant to the taste, said to be poisonous; tubes adnate or subdecurrent, slightly depressed, bright lemon-yellow tinged with green, becoming brownish-yellow with age, changing to blue when wounded, mouths subangular, of medium size: spores oblong-ellipsoid, smooth, yellowish-brown, 10–13 × 4–6 μ: stipe equal or enlarged above or below, pale-yellow with pink markings, especially near the base, glabrous, faintly reticulate at the top, solid, yellow within, 6–10 cm. long, 0.5–1.5 cm. thick.

TYPE LOCALITY: Brattleboro, Vermont.
HABITAT: Borders of woods or open woods.
DISTRIBUTION: Maine to North Carolina.
ILLUSTRATION: Palmer, Mushrooms *pl. 7, f. 4* (?).

35. **Ceriomyces bicolor** (Peck) Murrill, Mycologia **1**: 152. 1909.

Boletus bicolor Peck, Ann. Rep. N. Y. State Mus. **24**: 78. 1872.
Boletus rubeus Frost, Bull. Buffalo Soc. Nat. Sci. **2**: 102. 1874. (Type from Vermont.)
Boletus squamulosus Ellis, Bull. Torrey Club **6**: 77. 1876. (Type from New Jersey.) Not *B. squamulosus* Rostk.
Boletus dichrous Ellis, Bull. Torrey Club **6**: 109. 1876.

Pileus somewhat irregular, firm, convex, 5–10 cm. broad; surface dry, glabrous or finely tomentose or squamulose, at times rimose-areolate with age, apple-red or purplish-red, often fading or becoming stained with yellow when old; margin irregular, sometimes upturned: context flavous, changing slowly to blue at times when wounded, then back to flavous, taste mild; tubes short, adnate, nearly plane, flavous when young, becoming ochraceous with age, changing slowly to blue or greenish-blue when wounded, mouths angular, of medium size, 2–3 to a mm.: spores fusiform, smooth, pale ochraceous-brown, 10–12 × 4–5 μ: stipe nearly equal, firm, solid, dark, usually yellow and sometimes slightly reticulated at the top, changing to greenish-blue when bruised, smooth, nearly glabrous, showing dark dots under a lens, solid, flavous within, changing slowly to blue, 4–10 cm. long, 0.7–1.5 cm. thick.

TYPE LOCALITY: Sandlake, New York.
HABITAT: Open woods.
DISTRIBUTION: New England to North Carolina and west to Ohio and Kentucky.
ILLUSTRATIONS: Ann. Rep. N. Y. State Mus. **24**: *pl. 2, f. 5–8*; Bull. N. Y. State Mus. **10**: *pl. 81, f. 6–11*; McIlv. Am. Fungi *pl. 117, f. 1, 2*.

36. **Ceriomyces pallidus** (Frost) Murrill, Mycologia **1**: 152. 1909.

Boletus pallidus Frost, Bull. Buffalo Soc. Nat. Sci. **2**: 105. 1874.

Pileus circular, convex to plane or depressed, 5–12 cm. broad; surface smooth, dry, glabrous, rather soft to the touch, pallid or grayish-brown, slightly tinged with red at times; margin even, regular, rather thin, fertile, concolorous or paler: context white, becoming slightly bluish when wounded; tubes nearly adnate, plane or depressed, rarely becoming free, of medium length, very pale-yellowish, becoming dark-flavous with age

from the ripe spores, changing to blue when wounded, mouths small, angular to irregular, becoming uneven from the lengthening of the thin dissepiments into tooth-like projections: spores oblong-ellipsoid, smooth, ochraceous-brown, 10–13 × 4–5 μ: stipe usually slender, cylindric, tapering upward, glabrous, even, nearly white, streaked with brown or red, at times tinged with purple and flesh-color, often reddish within, especially near the base, 6–15 cm. long, 7–15 mm. thick.

TYPE LOCALITY: Brattleboro, Vermont.
HABITAT: In woods.
DISTRIBUTION: New England to Alabama.
ILLUSTRATIONS: Bull. N. Y. State Mus. 10: *pl. 81, f. 1–5;* McIlv. Am. Fungi *pl. 117, f. 4.*

37. **Ceriomyces subglabripes** (Peck) Murrill, Mycologia **1**: 153. 1909.

Boletus subglabripes Peck, Bull. N. Y. State Mus. 8: 112. 1889.
Boletus flavipes Peck, Ann. Rep. N. Y. State Mus. 39: 42. 1886. Not *B. flavipes* Berk. 1854.
Boletus rugosiceps Peck, Bull. N. Y. State Mus. 94: 20. 1905. (Type from Long Island.)

Pileus circular, rather thin, subconic or convex to nearly plane, occasionally cespitose, 3–10 cm. broad; surface glabrous, subviscid when moist, rugose at times, usually so when dry, reddish, pale-chestnut, grayish-brown, golden-brown, or rarely darker-brown; margin regular, concolorous: context white or whitish, unchangeable, of mild flavor; tubes plane or convex, adnate or depressed, lemon-yellow, becoming greenish-yellow, or darker from the maturing spores, mouths circular to angular, regular, rather small, edges entire: spores oblong-fusiform, greenish-brown when fresh, soon changing to ochraceous-brown, 12–15 × 4–5 μ: stipe central, cylindric, equal or slightly tapering upward, light-yellow without and within, sometimes tinged with red near the middle or lower down, striate but not reticulate, ornamented with small, pallid, scurfy particles, which sometimes partially disappear with age, 5–7 cm. long, 8–15 mm. thick.

TYPE LOCALITY: Caroga, New York.
HABITAT: Woods.
DISTRIBUTION: Nova Scotia, Maine, Connecticut, New York, and Missouri.
ILLUSTRATIONS: Ann. Rep. N. Y. State Mus. 51: *pl. 55;* Mem. N. Y. State Mus. 3: *pl. 64;* Bull. N. Y. State Mus. 94: *pl. Q, f. 6–10.*

38. **Ceriomyces scabripes** (Peck) Murrill, Mycologia **1**: 153. 1909.

Boletus scabripes Peck; V. White, Bull. Torrey Club 29: 555. 1902.

Pileus thick, firm, broadly convex, about 15 cm. broad; surface dry, glabrous, reddish-brown with a bloom: context mild, though not pleasant to the taste; hymenium convex; tubes adnate or slightly depressed, brown within, mouths minute, circular, somewhat darker, becoming black on drying and exuding a black juice with a strong odor: spores oblong-ellipsoid or fusiform, smooth, yellowish-brown, 11–14 × 4–5 μ: stipe stout, equal, grayish-white, adorned with numerous small, projecting, black points, solid, but spongy within, about 10 cm. long and 2–3 cm. thick.

TYPE LOCALITY: Bar Harbor, Maine.
HABITAT: Rich soil in woods.
DISTRIBUTION: Known only from the type locality.

39. **Ceriomyces Roxanae** (Frost) Murrill, Mycologia **1**: 153. 1909.

Boletus Roxanae Frost, Bull. Buffalo Soc. Nat. Sci. 2: 104. 1874.
? *Boletus multipunctus* Peck, Bull. N. Y. State Mus. 10: 952. *pl. K, f. 19–22.* 1902. (Type from New York.)

Pileus nearly plane, thin, circular, 3–7 cm. broad; surface yellowish-brown, rarely yellow, clothed with minute, floccose tufts appearing under a lens as numerous fine warts, which partially disappear with age; margin regular, concolorous, often curving or rolling upward on drying: context thin, white, tinged with yellow; tubes at first adnate, at length depressed, white when young, becoming pale-yellow, mouths small, regular, angular, edges thin, entire: spore soblong-ellipsoid, 10 × 4 μ: stipe central, cylindric, tapering upward, bulbous at times at the base, yellow or yellowish-brown, striate at the apex, variable in size, 4–7 cm. long, 5–15 mm. thick.

TYPE LOCALITY: Brattleboro, Vermont.
HABITAT: Borders of woods.
DISTRIBUTION: Maine, Vermont, and New York.

40. **Ceriomyces subtomentosus** (L.) Murrill, Mycologia **1**: 153. 1909.

Boletus subtomentosus L. Sp. Pl. 1178. 1753.
Ceriomyces jujubinus procerus Batt. Fung. Hist. 64. 1755.
Boletus crassipes Schaeff. Fung. Bavar. *pl. 112*. 1763.
? *Boletus communis* Bull. Herb. Fr. *pl. 393, B*. 1788.
Leccinum subtomentosum S. F. Gray, Nat. Arr. Brit. Pl. 1: 647. 1821.
Rostkovites subtomentosus P. Karst. Rev. Myc. 3[9]: 16. 1881.
Versipellis subtomentosus Quél. Ench. Fung. 158. 1886.
Xerocomus subtomentosus Quél. Fl. Myc. Fr. 418. 1888.
? *Boletus alutaceus* Morgan; Peck, Bull. N. Y. State Mus. 8: 109. 1889. (Type from Kentucky.)

Pileus convex to expanded, 4–10 cm. broad; surface dry, tomentose, often rimose-areolate, yellowish-brown, reddish-brown or subolivaceous; margin entire, often involute when young: context white or yellowish, unchanging, yellow beneath the cuticle, taste mild; tubes adnate or slightly depressed, often becoming nearly free, yellow, unchanging when wounded, greenish-yellow at the maturity of the spores, mouths large, irregular, sometimes compound, usually angular: spores greenish when fresh, fading to yellowish-brown, subfusiform, smooth, 10–12 × 4–5 μ: stipe ventricose or nearly equal, tapering below, furfuraceous to glabrous, even, or wholly or partially reticulate, pale-yellow or slightly brownish, often flavous above, reddish-brown when bruised, solid, white or yellowish within, 4.6 cm. long, 0.5–1.5 cm. thick.

TYPE LOCALITY: Port Jefferson, New York.
HABITAT: Deciduous woods.
DISTRIBUTION: Temperate North America and Europe.
ILLUSTRATIONS: Sturm, Deuts. Fl. Pilze **5**: *pl. 23*; Gibson, Edible Toadst. *pl. 22*.
EXSICCATI: Herpell, Präp. Hutpilze *16*; Sydow, Myc. Mar. *3026*.

41. **Ceriomyces tomentipes** (Earle) Murrill, Mycologia **1**: 154. 1909.

Boletus tomentipes Earle, Bull. N. Y. Bot. Gard. **3**: 298. 1905.

Pileus thick, convex to expanded, 9–13 cm. broad, about 3 cm. thick; surface dry, minutely tomentose to glabrous, umbrinous: context whitish or discolored, changing to blue when wounded; hymenium ventricose, deeply and broadly sinuate-depressed, decurrent; tubes sordid-yellow, becoming brick-red when wounded or on drying, mouths small, about 1 mm. broad, circular: spores ellipsoid, brownish, about 14 × 7 μ: stipe cylindric, densely but minutely velvety-pubescent, sometimes becoming nearly glabrous above, brick-red, flecked with brown below, solid, 8–13 cm. long, 2.5–3.5 cm. thick.

TYPE LOCALITY: Stanford University, California.
HABITAT: Among decaying oak leaves.
DISTRIBUTION: Known only from the type locality.

42. **Ceriomyces fumosipes** (Peck) Murrill, Mycologia **1**: 154. 1909.

Boletus fumosipes Peck, Ann. Rep. N. Y. State Mus. **50**: 108. 1897.

Pileus convex, 4–7 cm. broad, about 1–1.5 cm. thick; surface tomentose, umbrinous or dark olive-brown, very distinctly reticulate-rimose, the cracks becoming wider and whitish in color in older plants, while the areoles between contract almost into tufts, especially toward the margin; margin entire, fertile: context firm, fleshy, white, changing slowly and slightly to pale-blue, taste sweet; tubes plane in mass, somewhat depressed at maturity, equaling the thickness of the context, greenish-white changing to dirty-white with a reddish tinge and at the same time showing a tint of pale greenish-blue when wounded, stained yellowish-brown with the mature spores: spores ellipsoid, smooth, deep ochraceous-brown, 14–16 × 7–8 μ: stipe somewhat ventricose, solid, white within, changing slightly to bluish beneath the cuticle, 3–4 cm. long, 0.7–1 cm. thick, finely scabrous or scurfy, avellaneous-umbrinous, paler above, distinctly pale bluish-green at the apex.

TYPE LOCALITY: Port Jefferson, New York.
HABITAT: In woods, especially on roadside banks.
DISTRIBUTION: New York to North Carolina and west to Kentucky.

43. **Ceriomyces sordidus** (Frost) Murrill, Mycologia **1**: 155. 1909.

Boletus sordidus Frost, Bull. Buffalo Soc. Nat. Sci. **2**: 105. 1874.

Pileus convex to nearly plane, about 5 cm. broad; surface dry, subtomentose, dirty dark-brown; margin entire: context white, slightly tinged with green; tubes rather long,

nearly free, at first white, changing to bluish-green: spores ovoid to ellipsoid, smooth, yellowish-brown, 10–12 × 5–6 μ: stipe equal or slightly smaller at the top, brownish marked with darker streaks, usually greenish above, 5–7 cm. long, 1–1.5 cm. thick.

TYPE LOCALITY: Brattleboro, Vermont.
HABITAT: Recent excavations in woods.
DISTRIBUTION: Known only from the type locality.

44. **Ceriomyces communis** (Bull.) Murrill, Mycologia **1**: 155. 1909.

Boletus communis Bull. Herb. Fr. *pl. 393A,C.* 1788.
Boletus chrysenteron Bull. Hist. Champ. Fr. 328. 1791.
Versipellis chrysenteron Quél. Ench. Fung. 157. 1886.
Xerocomus chrysenteron Quél. Fl. Myc. Fr. 418. 1888.
Boletus fraternus Peck, Bull. Torrey Club **24**: 145. 1897. (Type from Alabama.)
Boletus umbrosus Atk. Jour. Myc. **8**: 112. 1902. (Type from New York.)

Pileus convex to expanded, depressed at times with age, gregarious, 4–8 cm. broad, 1–2 cm. thick; surface dry, tomentose to floccose-squamulose, often rimose-areolate, variable in color, usually some shade of red or purple, fading to brown (very frequently attacked by a whitish mould); margin entire, fertile: context yellowish-white to flavous, reddish beneath the cuticle, usually changing slowly to greenish or bluish when wounded, especially near the tubes, taste mild; tubes adnate, convex in mass, slightly decurrent, becoming much depressed at times with age, yellow or greenish-yellow, changing to greenish-blue when wounded, mouths large, angular, irregular, 1-2 to a mm.. spores fusiform, smooth, olivaceous when fresh, fading to pale-brownish, 11–13 × 4–5 μ: stipe subcylindric, often contorted, tapering at the base, flavous above, red or streaked with red below, longitudinally furrowed, glabrous or minutely scurfy, solid, sometimes yellow within at the base, 3–8 cm. long, 0.3–1.5 cm. thick.

TYPE LOCALITY: France.
HABITAT: Woods, especially on mossy banks.
DISTRIBUTION: Temperate North America; Bahamas; also in Europe.
ILLUSTRATIONS: Palmer, Mushr. Am. *pl. 7, f. 5;* N. Marsh. Mushr. Book *pl. 8;* Gibson, Edible Toadst. *pl. 22;* Gill. Champ. Fr. *pl. 53;* Ann. Rep. N. Y. State Mus. **54**: *pl. 76, f. 21–25.*
EXSICCATI: Cavara, Fungi Longob. *158.*

DOUBTFUL SPECIES

Boletus badiceps Peck, Bull. Torrey Club **27**: 18. 1900. Described from notes and drawings made by McIlvaine from specimens collected in oak woods near Philadelphia, Pennsylvania. Types destroyed.

Boletus Bakeri Tracy & Earle, Pl. Baker. 1: 23. 1901. Described from specimens collected in moist aspen thickets in Colorado, at an elevation of nearly 3000 meters. Too near *C. crassus* to be recognized as distinct without the discovery of better characters.

Boletus cubensis Berk. & Curt. Jour. Linn. Soc. **10**: 304. 1868. Known only from plants collected on the ground in Cuba by Wright. The types at Kew are pressed flat and show little except the squamulose, spotted character of the surface and the copious spores, which are oblong-ellipsoid, smooth, yellowish-brown, 17–21 × 7 μ. This species seems very near to *C. guadelupensis*, and *C. communis* is with difficulty distinguished from either, except by its smaller spores. A *Ceriomyces cubensis* has already been published by Patouillard for a plant in a different group of fungi.

Boletus dictyocephalus Peck, Bull. N. Y. State Mus. 8: 111. 1889. Described from notes and a single specimen collected by C. J. Curtis in North Carolina. Type not found.

Boletus eccentricus Peck, Bull. Torrey Club **27**: 18. 1900. Described from notes and drawings made by McIlvaine from specimens collected in grassy places in woods at Mt. Gretna, Pennsylvania. Types destroyed.

Boletus fulvus Peck, Bull. Torrey Club **27**: 19. 1900. Not *Boletus fulvus* Scop. Described from notes and drawings made by McIlvaine from twenty to thirty specimens collected on and about an old stump near Philadelphia, Pennsylvania. Types destroyed.

Boletus ignoratus Banning; Peck, Ann. Rep. N. Y. State Mus. **44**: 185. 1891. Described from specimens collected near Baltimore, Maryland, by Miss M. E. Banning. Types not found.

Boletus leptocephalus Peck, Bull. Torrey Club **25**: 371. 1898. Not *Boletus leptocephalus* Jacquin. Described from specimens collected by Earle in dry pine woods in Alabama. Too near *C. crassus* to be recognized as distinct without the discovery of better characters.

Boletus lignatilis Berk. & Curt. Jour. Linn. Soc. **10**: 303. 1868. Known only from Berkeley's very brief description drawn from specimens collected on rotten wood in dense woods in Cuba. The types at Kew add nothing to the description.

Boletus mutabilis Morgan, Jour. Cinc. Soc. Nat. Hist. 7: 6. *pl. 1.* 1884. Not *Boletus mutabilis* of Batsch and others. Described from Ohio. Types not seen. Peck's New York plants of this name are either *C. sordidus* or *Tylopilus felleus.*

Boletus nebulosus Peck, Ann. Rep. N. Y. State Mus. **51**: 292. 1898. Described from mature specimens collected on shaded roadside banks near Raybrook, New York. It has points in common with *C. sordidus* and *Tylopilus felleus.*

Boletus Pocono Schw. Trans. Am. Phil. Soc. II. **4**: 154. 1832. Described from specimens collected in beech woods in the Pocono Mountains, Pennsylvania. Types destroyed and description inadequate.

Boletus radicosus Bundy, Geol. Wisc. 1: 398. 1883. Bundy's specimens are not in existence.

Boletus rimosellus Peck, Bull. N. Y. State Mus. 8: 127. 1889. Described from notes and one dried specimen collected by C. J. Curtis in North Carolina. Type not found.

Boletus robustus Fries, Nov. Symb. 1: 46. 1851. Described from specimens collected by Oersted in volcanic soil on the Irasi volcano, Costa Rica. The drawing made by Oersted represents an undeveloped specimen, which might be almost any species. The specimens preserved in spirit could not be found at Copenhagen.

Boletus tenuiculus Frost, Bull. Buffalo Soc. Nat. Sci. **2**: 103. 1874. Described from Brattleboro, Vermont. The types are poor and the description brief.

Boletus unicolor Frost; Peck, Bull. N. Y. State Mus. 8: 100. 1889. Published by Peck from manuscript only. Frost's collection contains a single sheet with five poor specimens collected in pine woods and open sedgy places near Brattleboro, Vermont.

4. SUILLELLUS Murrill, Mycologia **1**: 16. 1909.

Hymenophore annual, terrestrial, centrally stipitate; surface glabrous or nearly so, dry or slightly viscid: context white or yellow, fleshy, considered poisonous in some species; tubes small, yellowish within, mouths red or orange from the first, not covered with a veil: spores oblong-ellipsoid, smooth, yellowish-brown, sometimes with greenish tints: stipe solid, usually reticulate or dotted.

Type species, *Boletus luridus* Schaeff.

Pileus yellow, brown, or red.	
Stipe 2 cm. or less in thickness.	
Stipe yellow above and red below.	1. *S. luridus.*
Stipe red the entire length, or rarely yellow at the base.	
Stipe reticulate.	2. *S. Frostii.*
Stipe not reticulate.	3. *S. rubinellus.*
Stipe over 5 cm. thick.	4. *S. Eastwoodiae.*
Pileus olivaceous.	5. *S. Morrisii.*

1. Suillellus luridus (Schaeff.) Murrill, Mycologia **1**: 17. 1909.

Boletus luridus Schaeff. Fung. Bavar. **3**: *pl. 107.* 1770.
Boletus tuberosus Bull. Herb. Fr. *pl. 100.* 1782.
Boletus rubeolarius Bull. Hist. Champ. Fr. 326. 1791.
Boletus Satanas Rostk. in Sturm, Deuts. Fl. Pilze **5**: 97. 1844.
Boletus Sullivantii Berk. & Curt.; Mont. Syll. Crypt. 152. 1856. (Type from Ohio.)
Boletus vermiculosus Peck, Ann. Rep. N. Y. State Cab. **23**: 130. 1872. (Type from New York.)
Boletus magnisporus Frost, Bull. Buffalo Soc. Nat. Sci. **2**: 103. 1874. (Type from Vermont.)
Boletus firmus Frost, Bull. Buffalo Soc. Nat. Sci. **2**: 103. 1874. (Type from Vermont.)
Boletus Spraguei Frost, Bull. Buffalo Soc. Nat. Sci. **2**: 103. 1874. (Type from Vermont.) Not *B. Spraguei* Berk. & Curt. 1872.
Boletus subvelutipes Peck, Bull. N. Y. State Mus. 8: 142. 1889. (Type from New York.)
Boletus Underwoodii Peck, Bull. Torrey Club **24**: 145. 1897. (Type from Alabama.)
Boletus chamaeleontinus Atk. Jour. Myc. **8**: 112. 1902. (Type from New York.)
Boletus Dartmouthi MacKay, Proc. Trans. Nova Scot. Inst. 11: 134. 1904. (Type from Nova Scotia.)

Pileus convex, gregarious or subcespitose, 5–12 cm. broad; surface dry, smooth, glabrous or minutely tomentose, sometimes clothed with rather conspicuous appressed, felted

fibers, occasionally rimose-areolate, brown with shades of red or yellow, often bright brownish-red, becoming paler with age; margin thick, obtuse, entire, sometimes slightly differing in color: context firm, whitish to flavous, quickly changing to blue when wounded, sometimes unchanging in older plants, considered somewhat poisonous; tubes nearly free, rarely adnate, plane or slightly convex in mass, yellow within, changing to dark greenish-blue when wounded, mouths small, circular, cinnabar-red, becoming brownish-orange, darker with age: spores oblong-ellipsoid, smooth, olivaceous when fresh, 11–16 × 4–6 μ: stipe subequal, 5–10 cm. long, 1–2 cm. thick, usually furfuraceous or punctate, at times nearly glabrous, rarely reticulate at the apex or on the upper half, red or reddish-brown below, yellow or orange above, the dots rosy or dark-red, solid, yellow within, varied with red or purple.

TYPE LOCALITY: Bavaria.
HABITAT: Clay banks or roadsides in open deciduous woods.
DISTRIBUTION: Temperate North America and Europe.
ILLUSTRATIONS: Fries, Sv. Aetl. Svamp. *pl. 12, 41;* Schaeff. Fung. Bavar. *pl. 107;* Bull. Herb. Fr. *pl. 100; pl. 490, f. 1;* Sturm, Deuts. Fl. Pilze **5**: *pl. 31;* Atk. Stud. Am. Fungi *pl. 54;* Gill. Champ. Fr. *pl. 65;* Palmer, Mushr. Am. *pl. 9, f. 3, 4.*
EXSICCATI: Herpell, Präp. Hutpilze *95;* D. Sacc. Myc. Ital. *807.*

2. **Suillellus Frostii** (Russell) Murrill, Mycologia 1: 17. 1909.

Boletus Frostii Russell; Frost, Bull. Buffalo Soc. Nat. Sci. **2**: 102. 1874. (Type from Vermont.)
Boletus alveolatus Berk. & Curt.; Frost, Bull. Buffalo Soc. Nat. Sci. **2**: 102. 1874. (Type from New England.)

Pileus convex to plane, gregarious, 6–15 cm. broad; surface glabrous, shining, viscid in damp weather or when young, blood-red, sometimes paler-red with patches of yellow: context firm, juicy, white or yellowish, scarcely changing to greenish-blue when wounded, taste mild; tubes adnate, subdecurrent, depressed, straw-yellow within, changing slowly to greenish-blue when injured, yellowish-brown with age, mouths large, stuffed, edges blood-red: spores oblong-ellipsoid, smooth, brownish-yellow, with a greenish tinge when fresh, 12–15 × 4–5 μ: stipe subventricose, tapering upward, blood-red, sometimes with yellow stains, becoming bluish-green when handled, deeply and beautifully alveolate-reticulate its entire length, solid, firm, yellowish within, 7–10 × 2 cm.

TYPE LOCALITY: Brattleboro, Vermont.
HABITAT: Thin, grassy oak woods.
DISTRIBUTION: New England to Virginia and west to Indiana and Tennessee.
ILLUSTRATIONS: Gibson, Edible Toadst. *pl. 24, f. 1;* Palmer, Mushr. Am. *pl. 9, f. 2;* Bull. N. Y. State Mus. 116: *pl. 108, f. 1–5.*

3. **Suillellus rubinellus** (Peck) Murrill.

Boletus rubinellus Peck, Ann. Rep. N. Y. State Mus. **32**: 33. 1880.

Pileus convex or subconical to plane, often umbilicate, gregarious, 1.5–5 cm. broad; surface reddish-brown, fading to yellow on the margin with age, slightly pubescent, somewhat viscid when moist; margin often recurved, thin, somewhat undulate: context white or pinkish, becoming yellowish when bruised, taste mild; tubes adnate or slightly depressed, 5 mm. long, mouths at first reddish, but soon turning brown, not changing color when bruised, small, circular or somewhat angular: spores oblong, fusiform, ferruginous-brown, 10–14 × 3–4 μ: stipe equal, slender, even, pinkish-red changing to brown, solid, pale-yellow within, deeper yellow toward the base, often yellow externally at the base, 1–4 cm. long, 2.5–7.5 mm. thick.

TYPE LOCALITY: Gansevoort, New York.
HABITAT: On the ground in coniferous or mixed woods.
DISTRIBUTION: New York to North Carolina and Kentucky.
ILLUSTRATION: Bull. N. Y. State Mus. 1^2: *pl. 2, f. 20–22.*

4. **Suillellus Eastwoodiae** Murrill, sp. nov.

Pileus thick, compact, hemispheric, solitary, nearly 10 cm. broad; surface smooth, glabrous, shining, not at all viscid, very light-brown; margin entire, slightly projecting, concolorous: context firm, nearly white with a yellowish tinge, changing to blue when wounded and later returning to its original color; tubes adnate, separating with age, about

1 cm. long, concave to plane in mass, yellowish, mouths small, angular, pink: spores oblong-ellipsoid, smooth, pale yellowish-brown under a microscope from dried specimens, 11–12.5 × 4–5 μ: stipe very much swollen at the center, contracted at the apex and base, perfectly even and glabrous, concolorous with a rosy tint in certain parts, yellowish at the base, solid, yellowish-white within, 9 cm. long, 7 cm. thick at the center.

Type collected near San Francisco, California, November, 1903, *Alice Eastwood*.
DISTRIBUTION: Known only from the type locality.

5. **Suillellus Morrisii** (Peck) Murrill.

Boletus radicans Morgan, Jour. Cinc. Soc. Nat. Hist. 7: 6. 1884. Not *B. radicans* Pers. 1801.
Boletus Morrisii Peck, Bull. Torrey Club 36: 154. 1909.

Pileus convex, gregarious or at times subcespitose, 3–8 cm. broad, 1–2 cm. thick; surface dry, finely pulverulent, dark-flavovirens to light-olivaceous, becoming partially or wholly glabrous and dull reddish-brown; margin thin, inflexed, projecting beyond the tubes, often radially cracked: context flavous, unchanging, rather thin, sweet; tubes long, flavous to melleous or greenish-yellow, much depressed near the stem, mouths subcircular, the extreme edges usually distinctly orange or testaceous: spores oblong-fusiform, smooth, yellowish-green, 12–14 × 4–5 μ: stipe subfusiform, flavous, distinctly punctate with reddish dots nearly to the apex, solid, yellow or dark-purplish within, 4–8 cm. long, 8–12 mm. thick.

TYPE LOCALITY: Ellis, Massachusetts.
HABITAT: Sandy soil in deciduous or mixed woods.
DISTRIBUTION: Massachusetts, New Jersey, Ohio, and Kentucky.

DOUBTFUL SPECIES

Boletus parvus Peck, Bull. Torrey Club 24: 145. 1897. Described from specimens collected by L. M. Underwood in grassy woods near Auburn, Alabama. Types not found.

5. **ROSTKOVITES** P. Karst. Rev. Myc. 3^9: 16. 1881.

Hymenophore annual, terrestrial, stipitate; surface viscid, glabrous or hirtellous: context fleshy, yellowish; tubes adnate, angular, yellow, not covered with a veil, exuding viscid drops which blacken on drying: spores oblong-ellipsoid, smooth, yellowish-brown: stipe solid, glandular-dotted, exannulate, not reticulate.

Type species, *Rostkovites granulatus* (L.) P. Karst.

Pileus glabrous or nearly so.
  Pileus brown when moist, yellowish on drying; stem over 8 mm. in diameter. 1. *R. granulatus*.
  Pileus yellow, often streaked with bright-red; stem usually slender, 8 mm. or less in diameter. 2. *R. subaureus*.
Pileus adorned with conspicuous tufts of hairs. 3. *R. hirtellus*.

1. **Rostkovites granulatus** (L.) P. Karst. Rev. Myc. 3^9: 16. 1881.

Boletus granulatus L. Sp. Pl. 1177. 1753.
Boletus lactifluus With. Brit. Pl. ed. 2. 3: 415. 1792.
Boletus circinans Pers. Neues Mag. Bot. 1: 107. 1794.
Leccinum lactifluum S. F. Gray, Nat. Arr. Brit. Pl. 1: 647. 1821.
Boletus collinitus Peck, Ann. Rep. N. Y. State Cab. 23: 129. 1872.
Boletus albus Peck, Ann. Rep. N. Y. State Cab. 23: 130. 1872. (Type from New York.)
Boletus viscosus Frost, Bull. Buffalo Soc. Nat. Sci. 2: 101. 1874. (Type from Vermont.) Not *B. viscosus* Venturi.
Boletus punctipes Peck, Ann. Rep. N. Y. State Mus. 32: 32. 1880. (Type from New York.)
Boletus brevipes Peck, Ann. Rep. N. Y. State Mus. 38: 110. 1885.
Viscipellis granulata Quél. Ench. Fung. 156. 1886.
Ixocomus granulatus Quél. Fl. Myc. Fr. 412. 1888.

Pileus subhemispheric to nearly plane, gregarious, rarely cespitose or solitary, 4–10 cm. broad, 1–1.5 cm. thick; surface very viscid, with easily separable cuticle, very variable in color, usually pinkish-gray to reddish-brown, fading to yellowish, often obscurely spotted, especially at the center; margin sterile, projecting, incurved and somewhat appendiculate when young: context thick, compact, elastic, pale-yellow next to the tubes, white above, unchanging when wounded, taste mild, somewhat mucilaginous; tubes short,

less than 5 mm., adnate, subdecurrent, plane in mass, pale-yellow to dirty-yellowish, unchanging when wounded, mouths simple, subcircular, irregular, edges rather thick, flecked with pinkish-brown glandules: spores fusiform, pale yellowish-brown, 7.5–9.5 × 2.5–3.5 μ: stipe short, thick, subequal or enlarged below, white or pale-yellow, dotted with pinkish-brown droplets which become darker on drying, solid, white within, 2.5–5 cm. long, 1–1.5 cm. thick.

TYPE LOCALITY: Sweden.
HABITAT: Open woods, especially near coniferous trees.
DISTRIBUTION: Temperate North America; Cinchona, Jamaica, 1666 m.; also in Europe.
ILLUSTRATIONS: Barla, Champ. Nice *pl. 31, f. 4–12;* Gill. Champ. Fr. *pl. 61;* Lucand, Champ. Fr. *pl. 149;* Sturm, Deuts. Fl. Pilze 5[2]: *pl. 3;* Fries, Sv. Aetl. Svamp. *pl. 23;* Atk. Stud. Am. Fungi *f. 167;* Mem. N. Y. State Mus. 3: *pl. 66, f. 1–6;* Ann. Rep. N. Y. State Mus. 48: *pl. 34, f. 1–5;* 49: *pl. 48, f. 1–5.*
EXSICCATI: Ellis & Ev. Fungi Columb. *1105;* Ellis & Ev. N. Am. Fungi *1931, 3512;* Herpell, Präp. Hutpilze *73;* C. Baker, Pacif. Slope Fungi *91.*

2. **Rostkovites subaureus** (Peck) Murrill, Mycologia **1**: 13. 1909.

Boletus flavidus Peck, Ann. Rep. N. Y. State Cab. **23**: 129. 1872. Not *B. flavidus* Fries, 1815.
Boletus subaureus Peck, Ann. Rep. N. Y. State Mus. **39**: 42. 1886.
Boletus americanus Peck, Bull. N. Y. State Mus. 1[2]: 62. 1887. (Type from New York.)

Pileus thin, convex to expanded, sometimes umbonate, 5–10 cm. broad; surface very viscid, yellow, often dotted or streaked with bright-red, dingy with age, sometimes spotted from the drying of the gluten; margin slightly tomentose or appendiculate when young: context comparatively thick, fleshy-tough, pale-yellow, pinkish-gray when wounded, taste mild; tubes adnate, scarcely decurrent, plane in mass, bright-yellow to dull-ochraceous, flecked with yellowish, exuding drops which blacken with age, mouths rather large, angular, edges obtuse: spores oblong-ellipsoid, smooth, ochraceous-ferruginous, 8.5–11 × 4–5 μ: stipe slender, tapering upward, yellow, darker towards the base, covered with numerous brownish or reddish-brown glandular dots which blacken with age, solid, yellow within, 4–7 cm. long, 4–8 mm. thick.

TYPE LOCALITY: Day, New York.
HABITAT: Woods and borders, especially near coniferous trees.
DISTRIBUTION: Eastern North America.
ILLUSTRATIONS: Atk. Stud. Am. Fungi *f. 166;* Bull. Conn. Geol. Nat. Hist. Surv. **3**: *pl. 29;* Mem. N. Y. State Mus. 3: *pl. 61, f. 6–13.*

3. **Rostkovites hirtellus** (Peck) Murrill, Mycologia **1**: 14. 1909.

Boletus hirtellus Peck, Bull. N. Y. State Mus. 8: 94. 1889.

Pileus broadly convex, subcespitose, 5–10 cm. broad; surface soft, viscid, golden-yellow, adorned with small tufts of hairs or fibrils: context pale-yellow; tubes adnate, of medium size, becoming dingy-ochraceous, mouths angular: spores pale ochraceous-brown, 9–10 × 4 μ: stipe stout, equal, glandular-dotted, yellow, 4–7 cm. long, 0.8–1.2 cm. thick.

TYPE LOCALITY: New York.
HABITAT: Sandy soil under pines.
DISTRIBUTION: Connecticut and New York.

6. **BOLETUS** (Dill.) L. Sp. Pl. 1177. 1753.

Suillus Poir. in Lam. Encyc. **7**: 496. 1806.
Pinuzza S. F. Gray, Nat. Arr. Brit. Pl. 1: 646. 1821.
Cricunopus P. Karst. Rev. Myc. 3[9]: 16. 1881.
Viscipellis Quél. Ench. Fung. 155. 1886.

Hymenophore annual, terrestrial, centrally stipitate; surface viscid, glabrous: context fleshy, white or yellowish; tubes adnate, small, angular, yellowish, covered with a whitish veil: spores oblong-ellipsoid or rarely globose, smooth, yellowish-brown: stipe solid, annulate, often glandular-dotted.

Type species, *Boletus luteus* L.

Stem glandular-dotted.
  Stem not at all reticulate. — 1. *B. luteus.*
  Stem reticulate above the annulus. — 2. *B. amabilis.*
Stem not glandular-dotted.
  Spores globose or subglobose. — 3. *B. sphaerosporus.*
  Spores oblong-ellipsoid. — 4. *B. Clintonianus.*

1. **Boletus luteus** L. Sp. Pl. 1177. 1753.

Boletus annulatus Pers. Syn. Fung. 503. 1801.
Boletus salmonicolor Frost, Bull. Buffalo Soc. Nat. Sci. **2**: 100. 1874. (Type from Vermont.)
Cricunopus luteus P. Karst. Rev. Myc. 3^9: 16. 1881.
Viscipellis luteus Quél. Ench. Fung. 155. 1886.
Boletus subluteus Peck, Bull. N. Y. State Mus. 1^2: 62. 1887. (Type from New York.)
Ixocomus luteus Quél. Fl. Myc. Fr. 414. 1888.
Boletus acidus Peck, Bull. N. Y. State Mus. 105: 15. 1906. (Type from New York.)

Pileus convex, solitary, 5–10 cm. broad; surface smooth, glabrous, very viscid, yellowish-brown, grayish-brown or reddish-brown, sometimes streaked, becoming darker and duller with age; margin thin, entire or undulate: context compact, pale-yellowish, darker with age, unchanging when wounded, edible; tubes 1.5–2.5 mm. long, plane or convex in mass, adnate or slightly decurrent, somewhat depressed, dark-melleous, unchanging when wounded, darker with age, mouths 1 mm. in diameter, nearly circular, edges adorned with reddish-brown dots: spores oblong-fusiform, smooth, yellowish-brown, 6–9 × 2.5–4 μ: stipe slightly tapering downward, pale-yellow to reddish-brown, glandular-dotted both above and below the annulus, solid, yellowish and unchanging within, about 3–6 cm. long, 1–2 cm. thick; annulus large, membranous, white to slightly brownish, glandular-dotted, persistent.

TYPE LOCALITY: Sweden.
HABITAT: Sandy soil in coniferous or mixed woods.
DISTRIBUTION: Eastern United States; also in Europe.
ILLUSTRATIONS: Gill. Champ. Fr. *pl. 66*; Bull. N. Y. State Mus. 105: *pl. T, f. 1–6*; Ann. Rep. N. Y. State Mus. **48**: *pl. 33, f. 1–12*; Barla, Champ. Nice *pl. 31; f. 1–3*; Sturm, Deuts. Fl. Pilze 5^2: *pl. 1*; Krombh. Abbild. *pl. 33*; Atk. Stud. Am. Fungi *f. 168, 169*.
EXSICCATI: Shear, N. Y. Fungi *28*; Herpell, Präp. Hutpilze *34, 114*; Ellis & Ev. N. Am. Fungi *1930*; Sydow, Myc. Mar. *1411*.

2. **Boletus amabilis** Peck, Bull. Torrey Club **27**: 612. 1900.

Pileus circular, convex, 5–18 cm. in diameter; surface glabrous, reddish-tawny, with small brown or blackish-brown spots in dried specimens, probably viscid when fresh; margin even, sterile, concolorous: context pallid; tubes radiating, decurrent to the annulus, short, yellow, mouths angular, radially elongate, edges thin, entire: stipe equal or slightly tapering downward, paler than the pileus, reticulate above the small whitish annulus, solid, 2.5–5 cm. long, 8–16 mm. thick.

TYPE LOCALITY: Colorado.
HABITAT: Dense spruce woods.
DISTRIBUTION: Colorado.

3. **Boletus sphaerosporus** Peck, Bull. Torrey Club **12**: 33. 1885.

Pileus circular, convex, 7–15 cm. broad; surface smooth, glabrous, viscid, cream-colored when young, becoming reddish-brown with age; margin thin, even, regular, sterile, often inflexed when dry, ornamented with portions of the veil: context pale-yellowish, becoming brownish with age: tubes adnate or somewhat decurrent, pale-yellow or yellowish-buff, becoming olive-brown or brown with age, tinged with green at times, mouths large, angular, uneven, shallow near the margin, edges thin, some of them elongated into coarse teeth: spores globose or broadly ellipsoid, 7.5–9 μ long: stipe thick, equal, 3–7 cm. long, 1.5–3 cm. thick, reticulate at the apex only, or for half the distance downward, bearing near the base a very conspicuous white, membranous, sheathing, persistent annulus.

TYPE LOCALITY: Madison, Wisconsin.
HABITAT: Low ravines and sandy places in woods, occasionally about stumps.
DISTRIBUTION: Wisconsin, Iowa, and Minnesota.

4. **Boletus Clintonianus** Peck, Ann. Rep. N. Y. State Cab. **23**: 128. 1872.

Boletus viridarius Frost, Bull. Buffalo Soc. Nat. Sci. **2**: 100. 1874. (Type from Vermont.)
Boletus serotinus Frost, Bull. Buffalo Soc. Nat. Sci. **2**: 100. 1874. (Type from Vermont.)

Pileus convex, gregarious, 5–12 cm. broad; surface golden-yellow to chestnut, becoming darker with age, smooth, viscid, glabrous, with separable cuticle; margin at first in-

curved, then thin and spreading: context 5 mm. or more thick, soft, pale-yellow or golden-yellow, becoming very slightly greenish when wounded, taste mild; tubes 5–7 mm. long, nearly plane in mass, adnate or subdecurrent, not depressed, pale-yellow to melleous, slightly discolored within when wounded, mouths subcircular, more or less compound, small, rather irregular, edges acute, changing to reddish or purplish-brown when bruised: spores oblong, brownish-ochraceous, 10–12 × 4–5 μ: stipe subequal, straw-yellow and slightly reticulate at the apex, reddish-chestnut and even below, solid, straw-yellow within, becoming slightly reddish when bruised, 5–12 cm. long, 1–2 cm. thick; annulus cottony-white or yellowish, ample, persistent, often appearing double.

TYPE LOCALITY: North Elba, New York.
HABITAT: Shaded grassy places.
DISTRIBUTION: Canada and the northeastern United States south to New Jersey.
ILLUSTRATIONS: Mem. N. Y. State Mus. **3**: *pl. 63, f. 1–8*; Ann. Rep. N. Y. State Cab. **23**: *pl. 5, f. 1–5*; Bull. N. Y. State Mus. **5**: *pl. 61, f. 6–10*.

DOUBTFUL SPECIES

Boletinus glandulosus Peck, Bull. N. Y. State Mus. 131: 34. 1909. Described from specimens collected by Hay in New Brunswick. Probably not distinct from *Boletus aeruginascens* Secr. (Mycogr. Suisse **2**: 6. 1833), with which *B. viscidus* Fries (Epicr. Myc. 423. 1838. Not *B. viscidus* L. 1753) is synonymous. *B. tridentinus* Bres. and *B. laricinus* Berk. are very closely related species, showing the same large, radiating pores.

Boletus elbensis Peck, Ann. Rep. N. Y. State Cab. **23**: 129. 1872. Described from North Elba, New York. This species was formerly considered a variety of *B. luteus* having rather large pores. The original specimens appear to have been destroyed, but those now at Albany under this name correspond rather closely with *Boletinus glandulosus* Peck.

7. **BOLETELLUS** Murrill, Mycologia **1**: 9. 1909.

Hymenophore annual, epixylous, centrally stipitate; surface floccose-verrucose, yellowish: context light-colored, fleshy; tubes angular, depressed, yellowish, covered with a veil: spores oblong-ellipsoid, smooth, ferruginous: stipe solid, white, not reticulate.

Type species, *Boletus Ananas* M. A. Curt.

1. **Boletellus Ananas** (M. A. Curt.) Murrill, Mycologia **1**: 10. 1909.

Boletus Ananas M. A. Curt. Am. Jour. Sci. II. 6: 351. 1848.
Boletus isabellinus Peck, Bull. Torrey Club **24**: 146. 1897. (Type from Mississippi.)

Pileus convex to expanded, somewhat irregular, 5–10 cm. broad; surface light-tan with a pinkish tinge to pinkish-brown, covered with a thick coat of conspicuous, imbricate, floccose scales, which are reddish flesh-colored fading to almost white; margin thin, lacerate, appendiculate: context white or cream-colored, changing to bluish when wounded; tubes plane in mass, adnexed, bright-yellow or tawny-yellow, sometimes with a pinkish tinge, becoming greenish-blue when injured, mouths of medium size, angular, edges thin: spores ellipsoid, longitudinally striate, dark-brown, 16–18 × 6–8 μ: stipe 5–10 cm. long, 1–2 cm. thick, cylindric, even, pure-white or very light-brownish, sometimes tinged with pink, changing to dull-red when wounded, solid or slightly hollow within; veil present in young stages, but mostly clinging to the margin of the pileus, leaving only a slight trace of an annulus in mature specimens.

TYPE LOCALITY: Santee River, South Carolina.
HABITAT: Parasitic on wounded pine trunks or about the base of living pine trees.
DISTRIBUTION: North Carolina to Alabama and Mississippi.

8. **PULVEROBOLETUS** Murrill, Mycologia **1**: 9. 1909.

Hymenophore annual, terrestrial, centrally stipitate; surface of pileus and stipe clothed with a conspicuous sulphur-yellow, powdery tomentum, which may be the remains of a universal veil: context white, fleshy; tubes adnate, yellowish, covered with a large veil: spores oblong-ellipsoid, ochraceous-brown: stipe solid, annulate, not reticulate.

Type species, *Boletus Ravenelii* Berk. & Curt.

1. **Pulveroboletus Ravenelii** (Berk. & Curt.) Murrill, Mycologia **1**: 9. 1909.

Boletus Ravenelii Berk. & Curt. Ann. Mag. Nat. Hist. II. 12: 429. 1853.

Pileus convex or nearly plane, 3–10 cm. broad, 1–3 cm. thick; surface smooth, slightly viscid when wet, subfibrillose and pulverulent, becoming glabrous on the disk, isabelline to testaceous or latericeous, the pulverulence being sulphur-yellow; margin entire, flavous: context white or very light-yellow, changing slowly to bluish when wounded; tubes plane in mass, adnate, depressed, pale-yellow to umbrinous-olivaceous, changing to greenish-blue when injured, mouths of medium size, subcircular or slightly sinuate: spores ellipsoid, olive-green when fresh, becoming ochraceous-brown, 10–12 × 5–6 μ: stipe cylindric, equal, clothed and colored like the young pileus, solid, yellow within, not changing to blue when wounded, 5–10 cm. long, 0.5–1.3 cm. thick; veil large and conspicuous, bright lemon-yellow, remaining attached to the stipe in the form of a slight, evanescent, tomentose annulus.

TYPE LOCALITY: South Carolina.
HABITAT: In deep shade, especially in thickets of *Kalmia* and *Rhododendron*.
DISTRIBUTION: New England to the Gulf of Mexico.

9. **STROBILOMYCES** Berk. Outl. Brit. Fungol. 236. 1860.

Eriocorys Quél. Ench. Fung. 163. 1886.

Hymenophore annual, terrestrial, centrally stipitate; surface of pileus and stipe blackish and shaggy: context white, at first fleshy, becoming tough; tubes angular, adnate, white when young, covered with a floccose veil: spores globose or broadly ellipsoid rugulose, blackish-brown: stipe solid, not reticulate.

Type species, *Boletus strobilaceus* Scop.

1. **Strobilomyces strobilaceus** (Scop.) Berk. Outl. Brit. Fungol. 236. 1860.

Boletus strobilaceus Scop. Anni Hist.-Nat. **4**: 148. 1770.
Boletus strobiliformis Dicks. Pl. Crypt. Brit. **1**: 17. 1785.
Boletus squarrosus Pers. Myc. Eur. **2**: 145. 1825.
Boletus coniferus Pers. Myc. Eur. **2**: 146. 1825.
Boletus stygius Wallr. Fl. Crypt. Germ. **4**: 608. 1833.
Eriocorys strobilacea Quél. Ench. Fung. 163. 1886.

Pileus hemispheric to expanded, 5–10 cm. broad; surface dry, soft and spongy, blackish-umbrinous, adorned with thick, projecting, floccose, squarrose, blackish scales; margin fringed with scales and fragments of the veil: context white or whitish, changing to red and then to black when wounded, mild to the taste, edible; tubes adnate, often depressed, white or cinereous, changing like the context when wounded, becoming brown or blackish with age, mouths large, angular: spores subglobose, asperulate, blackish-brown, 8–11 μ long: stipe equal or slightly tapering upward, sulcate-striate at the apex, densely floccose-tomentose, brown or blackish below, lighter above, solid, firm, fragile, 6–12 cm. long, 1–2 cm. thick; veil dense, cottony, white to grayish, adhering to the margin and to the stipe in mature plants.

TYPE LOCALITY: Carniola.
HABITAT: Shaded banks in woods.
DISTRIBUTION: Temperate North America and Europe.
ILLUSTRATIONS: Pers. Myc. Eur. **2**: *pl. 19*; Dicks. Pl. Crypt. Brit. **1**: *pl. 3, f. 2*; Atk. Stud. Am. Fungi *pl. 58, f. 173, 174*; Gibson, Edible Toadst. *pl. 23*; Palmer, Mushr. Am. *pl. 7, f. 6*; Gill. Champ. Fr. *pl. 79*; Sturm, Deuts. Fl. Pilze **5**: *pl. 38*; Bull. N. Y. State Mus. 94: *pl. 92, f. 1–6*; C. G. Lloyd, Phot. *26, 44*; Richon & Roze, Atl. Champ. *pl. 53*.
EXSICCATI: Underw. & Cook, Illust. Fungi *11*.

DOUBTFUL SPECIES

Strobilomyces coccineus Sacc. Syll. Fung. **6**: 50. 1888. (*Boletus coccineus* Fries, Epicr. Myc. 423. 1838. Not *B. coccineus* Bull. 1791.) This species, of doubtful affinities and doubtful locality, is based upon a brief description and a figure (Plumier, Traité Foug. *pl. 167, f. A, A*).

10. **BOLETINELLUS** Murrill, Mycologia 1: 7. 1909.

Hymenophore annual, terrestrial or sometimes attached to buried roots, pileus circular, varying to dimidiate at times; surface dry, minutely tomentose to floccose-tomentose: context white or yellowish, fleshy; tubes decurrent, large, shallow, elongate, not easily separating, radiating, yellow, not covered with a veil: spores ellipsoid, smooth, some shade of brown: stipe central, eccentric or lateral, solid, fleshy, or spongy.

Type species, *Boletinus porosus* Peck.

Stem eccentric or lateral; pileus reddish-brown, glabrous or minutely tomentose. 1. *B. merulioides.*
Stem central.
  Pileus dark-chestnut, subtomentose. 2. *B. castanellus.*
  Pileus bright-red, floccose-tomentose. 3. *B. paluster.*

1. **Boletinellus merulioides** (Schw.) Murrill, Mycologia 1: 7. 1909.

Daedalea merulioides Schw. Trans. Am. Phil. Soc. II. 4: 160. 1832.
Paxillus porosus Berk.; Lea, Cat. Pl. Cinc. 54. 1849.
Boletus lateralis Bundy, Geol. Wisc. 1: 398. 1883.
Boletinus porosus Peck, Bull. N. Y. State Mus. 8: 79. 1889.

Pileus thin, irregular, usually lobed, more or less deeply depressed at maturity, gregarious, 5–12 cm. broad; surface dry, minutely tomentose, dull reddish-brown; margin undulate or deeply lobed: context 5–10 mm. thick, yellow, changing slowly to bluish-green when wounded, having a musty or unpleasant odor; tubes decurrent, hymenium honey-yellow when young, becoming dull-yellow with age, often changing slightly to blue when wounded, tubes formed by radiating lamellae 2–3 mm. apart, branching and connected by numerous irregular veins of less prominence: spores subovoid to ellipsoid, smooth, yellow to brownish-ochraceous, 8–11 × 5–7 μ: stipe lateral or excentric, tough, expanded into the pileus, reticulate at the apex by the decurrent walls of the tubes, concolorous, clothed like the pileus, hollow, 1–3 cm. long, 8–12 mm. thick.

TYPE LOCALITY: Pennsylvania.
HABITAT: Shaded banks or wet places, especially about stumps and decaying roots.
DISTRIBUTION: Canada to Alabama and west to Wisconsin.
ILLUSTRATIONS: Atk. Stud. Am. Fungi *pl. 57*; McIlv. Am. Fungi *pl. 113*; Bull. Conn. Geol. Nat. Hist. Surv. 3: *pl. 28.*
EXSICCATI: Ellis, Ev. & Barth. Fungi Columb. *1911*; Ellis, N. Am. Fungi *704*; Shear, N. Y. Fungi *27.*

2. **Boletinellus castanellus** (Peck) Murrill, Mycologia 1: 8. 1909.

Boletinus castanellus Peck, Bull. Torrey Club 27: 613. 1900.

Pileus convex or nearly plane, 2.5–4 cm. broad; surface dry, subtomentose, soft, spongy, dark-chestnut: context white or yellowish-white; tubes adnate or slightly decurrent, nearly plane in mass, brown, mouths large, angular: spores ellipsoid, 7.5–10 × 5 μ: stipe short, concolorous, glabrous, slightly reticulate at the apex, solid, whitish or grayish within, 2.5 cm. long, 4–8 cm. thick.

TYPE LOCALITY: New Jersey.
HABITAT: Woods.
DISTRIBUTION: New York to Virginia.

3. **Boletinellus paluster** (Peck) Murrill, Mycologia 1: 8. 1909.

Boletus paluster Peck, Ann. Rep. N. Y. State Cab. 23: 132. 1872.
Boletinus paluster Peck, Bull. N. Y. State Mus. 8: 78. 1889.

Pileus thin, broad, convex to plane or slightly depressed, at times with a small umbo, 3–7 cm. broad, 1.5–2 cm. thick; surface floccose-tomentose, bright-red; margin thin, subincurved: context yellowish-white, unchangeable, comparatively thick; tubes slightly decurrent, short, yellow, changing to bluish-green when wounded, becoming sordid-ochraceous with age, mouths very large, 1–2 mm. in radial diameter, compound, angular; spores ellipsoid, dirty greenish-yellow when fresh, becoming pinkish-brown, 6–8 × 2.5–4 μ: stipe slender, yellow and striate at the apex, minutely squamulose, strongly tinged with red, yellow and tomentose at the base, solid, 2.5–5 cm. long, 4–6 cm. thick.

TYPE LOCALITY: North Elba, New York.
HABITAT: Wet places, usually among moss.
DISTRIBUTION: Ontario to New Jersey.
ILLUSTRATION: Ann. Rep. N. Y. State Cab. **23**: *pl. 6, f. 4–7.*
EXSICCATI: Ellis & Ev. N. Am. Fungi *1932;* Ellis, Ev. & Barth. Fungi Columb. *2307.*

11. **BOLETINUS** Kalchb. Ic. Hymen. Hung. 52. 1877.

Euryporus Quél Ench. Fung. 163. 1886.
Boletopsis P. Henn. in E. & P. Nat. Pfl. 1^{1**}: 194. 1899.

Hymenophore annual, terrestrial or rarely epixylous, centrally stipitate; surface dry, minutely silky to fibrillose or squamose: context whitish or yellowish, fleshy or spongy; tubes large, shallow, elongate, tough, not easily separating, radiately arranged, adnate or slightly decurrent, yellowish, covered with a veil: spores elongate, smooth, yellowish-brown to purplish-brown, sometimes with greenish tints: stipe more or less annulate, spongy or hollow within.

Type species, *Boletus cavipes* Opat.

Stipe hollow; pileus tawny-brown, fibrillose-squamulose. 1. *B. cavipes.*
Stipe solid.
  Pileus whitish or grayish, slightly squamulose. 2. *B. grisellus.*
  Pileus yellow or yellowish.
    Pileus 9 cm. or less broad. 3. *B. Berkeleyi.*
    Pileus 10 cm. or more broad. 4. *B. appendiculatus.*
  Pileus red or reddish, conspicuously squamose.
    Spores purplish-brown; scales scattered. 5. *B. spectabilis.*
    Spores ochraceous-brown; scales dense. 6. *B. pictus.*

1. **Boletinus cavipes** (Opat.) Kalchb. Ic. Hymen. Hung. 52. 1877.

Boletus cavipes Opat. Comm. Bolet. 11. 1836.
Boletus ampliporus Peck, Ann. Rep. N. Y. State Mus. 26: 67. 1874. (Type from New York.)

Pileus broadly convex, rather tough, flexible, usually subumbonate, 3.5–10 cm. broad; surface soft, fibrillose-squamulose, tawny-brown, sometimes tinged with reddish or purplish: context thin, yellowish; tubes slightly decurrent, pale-yellow when young, darker and tinged with green at maturity, becoming dingy-ochraceous with age: spores ellipsoid, olivaceous when fresh, changing later to yellowish-ochraceous, 7.5–10 × 4 μ: stipe equal or slightly tapering upward, slightly fibrillose or floccose, tawny-brown or yellowish-brown, yellowish at the apex, hollow within, sometimes stuffed when young, 3.5–7 cm. long, 6–12 mm. thick; veil white, evanescent, partly adhering to the margin of the pileus and partly to the stipe in the form of a delicate annulus.

TYPE LOCALITY: Hungary.
HABITAT: Swamps or damp mossy places.
DISTRIBUTION: New England and New York; also in Europe.
ILLUSTRATIONS: Kalchb. Ic. Hymen. Hung. *pl. 31;* Gill. Champ. Fr. *pl. 52.*

2. **Boletinus grisellus** Peck, Mem. N. Y. State Mus. **3**: 169. 1900.

Pileus convex to nearly plane, 3–7 cm. broad; surface dry, slightly fibrillose-squamulose, whitish or grayish, sometimes tinged with yellow: context white, unchanging; tubes adnate or slightly decurrent, grayish, becoming brownish with age, mouths rather large and angular: spores oblong or ellipsoid, ferruginous-brown, 7.5–10 × 4–5 μ: stipe equal or slightly tapering upward, whitish or pallid, slightly reticulate at the apex by the decurrent walls of the tubes, 2.5–5 cm. long, 0.5–1 cm. thick; veil in young plants slight, webby or fibrillose, soon disappearing.

TYPE LOCALITY: Natick, Massachusetts.
HABITAT: Under or near tamarack trees.
DISTRIBUTION: Massachusetts.
ILLUSTRATION: Mem. N. Y. State Mus. **3**: *pl. 52, f. 13–19.*

3. **Boletinus Berkeleyi** Murrill, Mycologia **1**: 6. 1909.

Boletus decipiens Berk. & Curt. Ann. Mag. Nat. Hist. II. **12**: 430. 1853. Not *B. decipiens* Schrad. 1794.
Boletinus decipiens Peck, Bull. N. Y. State Mus. 8: 78. 1889.

Pileus convex above, nearly plane below, becoming somewhat irregular on expanding, 7–9 cm. broad, about 3 cm. thick at the center; surface dry, minutely silky, slightly scaly

on the disk, whitish-yellow or dirty yellowish-brown, sometimes faintly speckled; margin acute, entire, appendiculate: context yellow, taste mild; tubes scarcely decurrent, adnate, plane or somewhat concave in mass, yellow, becoming brownish-yellow with age: spores rather small, oblong, ochraceous-ferruginous, 8-10 × 3–4 μ: stipe equal, usually curved, tapering below, brownish-yellow, subfloccose to glabrous, solid or spongy and yellow within, 5–8 cm. long, 0.7–1.5 cm. thick; veil floccose, evanescent, adhering partly to the margin and partly to the summit of the stipe in the form of a slight annulus.

TYPE LOCALITY: South Carolina.
HABITAT: Thin woods.
DISTRIBUTION: New Jersey to Florida and west to Kentucky.

4. **Boletinus appendiculatus** Peck, Bull. Torrey Club **23**: 418. 1896.

Pileus convex, 10–20 cm. broad; surface glabrous, ochraceous-yellow; margin appendiculate, with a thin, incurved, conspicuous veil: context pale-yellow, unchanging; tubes yellow, becoming darker or brownish when wounded, mouths rather small, angular, unequal: spores oblong-ellipsoid, pale-yellow, 10–12 × 4 μ: stipe slightly thickened at the base, yellow, solid, 5–7 cm. long, 8–12 mm. thick.

TYPE LOCALITY: Washington, D. C.
HABITAT: Under fir trees.
DISTRIBUTION: Known only from the type locality.

5. **Boletinus spectabilis** Peck, Ann. Rep. N. Y. State Cab. **23**: 128. 1872.

Pileus broad, convex, 5–10 cm. broad; surface bright-red, viscid when moist, at first covered with a red tomentum, becoming squamose and fading to grayish-red or yellowish-brown: context whitish or pale-yellow, becoming deeper yellow on exposure, emitting a strong, unpleasant odor; tubes adnate, convex in mass, ochraceous, concealed at first by a reddish, glutinous membrane, mouths large, angular: spores oblong-ellipsoid, pointed at one end, usually with one or two nuclei, cremeous-melleous or darker under a microscope, purplish-brown in mass, 12–14 × 5 μ: stipe subequal, yellow above the annulus, red or yellowish-red below, 7–12 cm. long, 8–12 mm. thick; veil tomentose when young, remaining in the form of scales on the pileus and a ring on the stipe.

TYPE LOCALITY: North Elba, New York.
HABITAT: Exposed northern swamps.
DISTRIBUTION: Canada to New York and west to Wisconsin.
ILLUSTRATIONS: Ann. Rep. N. Y. State Cab. **23**: *pl. 6, f. 1–3*; Mem. N. Y. State Mus. **3**: *pl. 62, f. 1–7*.

6. **Boletinus pictus** Peck, Bull. N. Y. State Mus. 8: 77. 1889.

Boletus pictus Peck, Ann. Rep. N. Y. State Cab. **23**: 128. 1872.
Boletus Spraguei Berk. & Curt. Grevillea 1: 35. 1872. (Type from New England.)
Boletus Murraii Berk. & Curt. Grevillea 1: 36. 1872.

Pileus convex to expanded, gregarious, 5–8 cm. broad; surface dry or slightly viscid, imbricate-scaly, at first deep-red, later becoming fawn-colored owing to the separation of the dense, fibrillose tomentum into scales; margin often appendiculate: context thick, tough, creamy-yellow, changing slowly to pinkish when bruised, becoming yellowish-brown with age; tubes adnate, somewhat decurrent, not depressed, short, pale-yellow, sometimes changing to pinkish-brown when bruised, becoming dull yellowish-brown with age, mouths angular, large, compound: spores ellipsoid, smooth, stramineous under a microscope, ochraceous or pale-brown in mass: stipe cylindric, slightly tapering downward, yellowish above, subglabrous below, squamulose, solid or spongy within, sometimes becoming hollow, the flesh white with brownish discolorations toward the base, 5–7 cm. long, 1 cm. or less thick; veil white, thin, copious, tomentose, remaining in mature plants partly attached to the margin, but mostly on the stipe as a dense, tomentose covering and an irregular, subapical annulus.

TYPE LOCALITY: New York.
HABITAT: Woods and mossy swamps.

DISTRIBUTION: Mountainous regions of eastern North America.
ILLUSTRATIONS: Atk. Stud. Am. Fungi *f. 170*; N. Marsh. Mushr. Book *pl. 33*; Mem. N. Y. State Mus. **3**: *pl. 61, f. 1–5*; Bull. N. Y. State Mus. **5**: *pl. 61, f. 1–5*.
EXSICCATI: Shear, N. Y. Fungi *26*.

DOUBTFUL SPECIES

Boletinus borealis Peck, Bull. Torrey Club 22: 206. 1895. Described from dried specimens collected by Waghorne on Capstan Island, Labrador. The types at Albany resemble *B. cavipes*.

Family 7. **AGARICACEAE**

By William Alphonso Murrill

Hymenophore annual, stipitate or sessile, terrestrial or epixylous : context usually fleshy, rarely tough or leathery ; hymenium radiately lamellate or plicate, fleshy or tough, never gelatinous.

Hymenium plicate, the folds obtuse. — Tribe 1. Chantereleae.
Hymenium truly lamellate.
  Context composed mostly of swollen, vesicular cells. — Tribe 2. Lactarieae.
  Context composed of slender, elongate cells. — Tribe 3. Agariceae.

Tribe **1. CHANTERELEAE.**[1] Hymenophore annual, stipitate or sessile, terrestrial or epixylous, rarely occurring on living mosses or large agarics ; context usually fleshy, rarely tough or leathery ; hymenium plicate, the folds obtuse, fleshy or tough, often branching or anastomosing : spores hyaline, ochraceous, ferruginous, or green.

Spores hyaline or ochraceous.
  Hymenophore tough or leathery, reviving.
    Stipe lateral or wanting. — 1. Plicatura.
    Stipe central. — 2. Xerotinus.
  Hymenophore fleshy or membranous, putrescent, not reviving.
    Growing on living mosses. — 3. Dictyolus.
    Growing on decaying agarics. — 4. Asterophora.
    Growing on the ground or on dead wood.
      Hymenophore simple.
        Pileus thin, membranous, infundibuliform ; plants tropical. — 5. Trogia.
        Pileus fleshy, usually convex or depressed, rarely infundibuliform ; mostly temperate species. — 6. Chanterel.
      Hymenophore compound, connate-cespitose. — 7. Polyozellus.
Spores ferruginous ; stipe lateral or wanting. — 8. Plicaturella.
Spores green ; stipe central. — 9. ~~Chlorophyllum~~.

1. **PLICATURA** Peck, Ann. Rep. N. Y. State Mus. **24** : 75. 1872.

Hymenophore sessile, resupinate, or laterally stipitate, tough, reviving ; lamellae obtuse, fold-like, not covered by a veil : spores hyaline.

Type species, *Plicatura Alni* Peck.

Lamellae white or whitish.
  Spores cylindric ; temperate species.
    Pileus effused-reflexed, margin sterile. — 1. *P. nivea*.
    Pileus sessile, margin fertile. — 2. *P. faginea*.
  Spores ovoid ; tropical species. — 3. *P. ~~guadelupensis~~*.
Lamellae yellow. — 4. *P. flabelliformis*.
Lamellae deep brick-red. — 5. *P. lateritia*.

1. **Plicatura nivea** (Fries) P. Karst. Finl. Basidsv. 342. 1889.

Merulius serpens Sommerf. Suppl. Fl. Lapp. 268. 1826. Not *M. serpens* Tode (Abh. Hall. Nat. Ges. **1** : 355), 1783.
—*Merulius niveus* Fries, Elench. Fung. **1** : 59. 1828.
Plicatura Alni Peck, Ann. Rep. N. Y. State Mus. **24** : 76. 1872. (Type from New York.)
Trogia Alni Peck, Ann. Rep. N. Y. State Mus. **29** : 66. 1878.
Chanterel candidus Peck, Bull. Torrey Club **25** : 323. 1898. (Type from Newfoundland.)

Pileus thin, coriaceous, imbricate, effused-reflexed, 1.5–2.5 cm. broad ; surface brownish-tawny, silky-tomentulose, margin sterile : lamellae plicate, unequal, interrupted, narrow, angular, obtuse, undulate or crisped, white, becoming inconspicuous at times on drying, but reappearing on the application of moisture : spores minute, narrowly cylindric, slightly curved, hyaline, 5–6 μ long.

[1] By William Alphonso Murrill.

TYPE LOCALITY: Lapland.
HABITAT: On decaying trunks of *Alnus*, etc.
DISTRIBUTION: Eastern Canada to New York; also in northern Europe.
EXSICCATI: P. Karst. Fungi Fenn. *244;* Thüm. Myc. Univ. *804;* Ellis & Ev. N. Am. Fungi *2017;* Rab.-Wint.-Paz. Fungi Eur. *3945.*

2. **Plicatura faginea** (Schrad.) P. Karst. Finl. Basidsv. 342. 1889.

Merulius fagineus Schrad. Spic. Fl. Germ. 137. 1794.
Chanterel crispus Pers. Neues Mag. Bot. 1: 106. 1794.
Trogia crispa Fries, Monogr. Hymen. Suec. 2: 244. 1863.

Pilei crowded, subimbricate, usually sessile, persisting, reviving when moistened, 1–2 cm. broad; surface reddish-yellow or tan, paler toward the margin, often whitish-villose when young; margin beautifully lobed: context fleshy-membranaceous, tough, thin, white; lamellae white, narrow, vein-like, irregular, continuous or interrupted, sometimes branched, edges crisped, obtuse, white or bluish-gray: spores cylindric, smooth, hyaline, $4\times1\,\mu$.

TYPE LOCALITY: Germany.
HABITAT: On dead limbs and trunks of birch, alder, beech, etc.
DISTRIBUTION: Canada to North Carolina and west to Wisconsin and Colorado; also in Europe.
ILLUSTRATIONS: Atk. Stud. Am. Fungi *pl. 39;* Pat. Tab. Fung. *f. 14*, Pers. Ic. Descr. Fung. *pl. 8, f. 7.*
EXSICCATI: Rav. Fungi Car. 5: *13;* P. Karst. Fungi Fenn. *107;* Shear, N. Y. Fungi *109;* Underw. & Cook, Illust. Fungi *8;* Ellis, N. Am. Fungi. *1203;* Sydow, Myc. Mar. *3427;* Roum. Fungi Gall. *602, 1401, 3301.*

3. **Plicatura ~~guadelupensis~~ obliqua** (Pat.) Murrill.

Xerotus guadelupensis Pat. Bull. Soc. Myc. Fr. 15: 195. 1899.

Pileus imbricate, flabelliform, sessile, coriaceous-membranaceous, flexible, 3–5 cm. broad; surface reddish-brown or brown, short-hispid with scattered, hairy tubercles composed of colorless, unicellular, obtuse filaments; margin straight, entire, striate: lamellae distant, narrow, fold-like, obtuse, very unequal, interveined, white stained with brown: spores ovoid, smooth, hyaline, $10\times8\,\mu$; basidia elongate, clavate, 45–60 μ; cystidia slender, pointed, septate, not prominent.

TYPE LOCALITY: Guadeloupe.
HABITAT: On *Vitex divaricata.*
DISTRIBUTION: Known only from the type locality.

4. **Plicatura flabelliformis** (Berk. & Rav.) Murrill.

Chanterel flabelliformis Berk. & Rav.; Berk. & Curt. Ann. Mag. Nat. Hist. II. 12: 425. 1853.

Pileus thin, tough, laterally stipitate, oblong-flabelliform, 12–15 mm. long, 1 cm. broad; surface white, tomentose, with a few shallow, concentric furrows; margin thin, slightly lobed: lamellae superficial, forking and anastomosing, yellowish: stipe clothed and colored like the pileus, tapering downward, 4 mm. long, 2 mm. thick.

TYPE LOCALITY: South Carolina.
HABITAT: On fallen trunks.
DISTRIBUTION: South Carolina.
EXSICCATI: Rav. Fungi Car. 3: *5.*

5. **Plicatura lateritia** (Berk. & Curt.) Murrill.

Xerotus lateritius Berk. & Curt. Jour. Linn. Soc. 10: 303. 1868.
Xerotus viticola Berk. & Curt. Grevillea 1: 34. 1872. (Type from South Carolina.)

Pileus suborbicular, vertically affixed, 6–18 mm. broad; surface nearly glabrous, dark brick-red near the base, lighter toward the margin, which is subsulcate, faintly striate, subincurved, not readily expanding: context thin, tough; lamellae distant, broad, deep brick-red, subserrulate on the edge, some of them bifurcate near the outer end: spores globose, smooth, ochraceous, 4–5 μ in diameter.

TYPE LOCALITY: Cuba.
HABITAT: Dead trunks, especially of *Carpinus* and *Vitis.*
DISTRIBUTION: Southern United States and tropical America.
EXSICCATI: Ellis & Ev. N. Am. Fungi *1590;* Rab.-Wint.-Paz. Fungi Eur. *3531;* Rav. Fungi Car. 4: *3;* Rav. Fungi Am. *414.*

2. XEROTINUS Reichenb. Consp. 14. 1828.

Xerotes Fries, Syst. Orb. Veg. 78; hyponym. 1825.
Xerotus Fries, Elench. Fung. 1: 48. 1828. Not *Xerotus* R. Brown, 1810.

Hymenophore tough, reviving, stipitate; lamellae obtuse, fold-like, usually furcate, veil wanting: spores hyaline: stipe central, thick, homogeneous with the pileus.

Type species, *Xerotus afer* Fries.

Stipe central; pileus brownish-white. 1. *X. martinicensis.*
Stipe lateral; pileus yellowish. 2. *X. Mauryi.*

1. Xerotinus martinicensis (Pat.) Murrill.

Xerotus martinicensis Pat. in Duss, Enum. Champ. Guad. 48. 1903.

Pileus rigid, rather thin, convex, papillate, 1–2 cm. broad; surface brownish-white, dry, pulverulent, rugulose, plicate-sulcate at the center; margin acute, entire: lamellae rigid, not decurrent, few, distant, interveined, unequal, broad, thick, entire, obtuse, brownish: stipe slender, central, cylindric, hard, reddish-brown, pubescent, 1–2 cm. long, 1–1.5 mm. thick.

TYPE LOCALITY: Martinique.
HABITAT: On rotten limbs of *Averrhoa Bilimbi.*
DISTRIBUTION: Martinique and Guadeloupe.

2. Xerotinus Mauryi (Pat.) Murrill.

Xerotus Mauryi Pat. Bull. Soc. Myc. Fr. 14: 51. 1898.

Pileus indurated, flabelliform, rounded in front or lobed, 2–5 × 2–3 cm.; surface glabrous, ochroleucous; margin inflexed, smooth or sulcate, plicate-rugose: lamellae simple or forked, interveined, distant, fuscous, edges thick: spores ovoid, smooth, hyaline, 4–5 × 3 μ: stipe short, lateral, attenuate, woody, glabrous, 2–4 mm. long, 2 mm. thick.

TYPE LOCALITY: Mexico.
HABITAT: Dead wood.
DISTRIBUTION: Known only from the type locality.
ILLUSTRATION: Bull. Soc. Myc. Fr. 14: *pl. 7, f. 1.*

DOUBTFUL SPECIES

Xerotus caribaeus Fries, Epicr. Myc. 401. 1838. Based upon specimens collected on islands in the Caribbean Sea and figured in Plumier, Traité Foug. *pl. 167, C.*

3. DICTYOLUS Quél. Ench. Fung. 139. 1886.

Corniola S. F. Gray, Nat. Arr. Brit. Pl. 1: 637. 1821. Not *Corniola* Adans. 1763.
Leptoglossum P. Karst. Hattsv. 242. 1879. Not *Leptoglossa* DC. 1841.

Hymenophore fleshy, putrescent, laterally stipitate, sessile or resupinate, growing on mosses; lamellae obtuse, fold-like, veil absent: spores hyaline: stipe lateral or wanting.

Type species, *Chanterel muscigenus* (Bull.) Fries.

Lamellae dichotomous; stipe distinct. 1. *D. muscigenus.*
Lamellae ramose-reticulate; stipe much reduced or wanting. 2. *D. retirugus.*

1. Dictyolus muscigenus Quél. Ench. Fung. 139. 1886.

Agaricus muscigenus Bull. Herb. Fr. *pl. 288.* 1785.
Agaricus Foliolum Afzel. Veg. Suec. Obs. 17. 1785.
Elvela dimidiata Bull. Hist. Champ. Fr. 290. 1791.
Chanterel muscigenus Fries, Syst. Myc. 1: 323. 1821.
Merulius serotinus Pers. Myc. Eur. 2: 22. 1825.

Pileus submembranaceous, laterally stipitate, spatulate, 1–2.5 cm. broad; surface glabrous, zonate, fuscous to whitish-cinereous; margin entire to undulate or lobed: lamellae distant, dichotomous, concolorous: spores ellipsoid, smooth, hyaline, 10–12 × 6–8 μ: stipe short, concolorous or slightly darker, villose at the base.

TYPE LOCALITY: France.
HABITAT: On mosses.
DISTRIBUTION: Greenland to South Carolina; also in Europe.
ILLUSTRATIONS: Bull. Herb. Fr. *pl. 288; pl. 498, f. 2.*
EXSICCATI: Desmaz. Pl. Crypt. *1550;* Sydow, Myc. Mar. *314;* Romell, Fungi Scand. *4;* Roum. Fungi Sel. *5906;* Roum. Fungi Gall. *707;* Westend. Herb. Crypt. Belge *764.*

2. **Dictyolus retirugus** (Bull.) Quél. Ench. Fung. 140. 1886.

Elvela retiruga Bull. Hist. Champ. Fr. 289. 1791.
Merulius reticulatus Pers. in J. F. Gmel. Syst. Nat. 2 : 1431. 1791.
Merulius retirugus Pers. Syn. Fung. 494. 1801.
Chanterel retirugus Fries, Syst. Myc. 1 : 324. 1821.

Pileus sessile or subsessile, membranaceous, expanded, irregularly flabelliform, 1–2 cm. broad; surface cinereous, minutely scabrous; margin undulate or lobed, tan or brown: lamellae radiating from point of attachment, reticulate, anastomosing, thin, obtuse: spores broadly ellipsoid, smooth, granulose, 6–10 × 4–8 μ.

TYPE LOCALITY: France.
HABITAT: On mosses.
DISTRIBUTION: Greenland and Alaska to Minnesota and California; also in Europe.
ILLUSTRATIONS: Bull. Herb. Fr. *pl. 498, f. 1;* Minn. Bot. Stud. 4: *pl. 12.*

DOUBTFUL SPECIES

Chanterel bryophilus Peck, Harriman Alaska Exp. Crypt. 46. 1904. (Not *C. bryophilus* Fries, Syst. Myc. 1 . 325. 1821.) Apparently not distinct from *D. retirugus.*

4. **ASTEROPHORA** Ditmar, Neues Jour. Bot. Schrad. 3^3 : 17. 1809.

Nyctalis Fries, Syst. Orb. Veg. 78. 1825.
Sphaeropus Paulet; Paulet & Lév. Ic. Champ. 108, as synonym. 1855.

Hymenophore fleshy, putrescent, usually parasitic on other agarics; pileus convex or depressed, often conidia-bearing; lamellae fold-like, not forked, veil fibrillose or none: spores hyaline or brownish: stipe central, fleshy.

Type species, *Asterophora lycoperdoides* (Bull.) Ditmar.

1. **Asterophora Clavus** (Schaeff.) Murrill.

Elvela Clavus Schaeff. Fung. Bavar. 4: Ind. 111. 1774.
Agaricus lycoperdonoides Bull. Herb. Fr. *pl. 166.* 1783.
Asterophora lycoperdoides Ditmar, Neues Jour. Bot. Schrad. 3^3 : 17. 1809.
Asterosperma agaricoides Pers. Champ. Comest. 132. 1819.
Onygena agaricina Schw. Schr. Nat. Ges. Leipzig 1 : 65. 1822.
Nyclalis asterophora Fries, Epicr. Myc. 371. 1838.

Pileus hemispheric to depressed, usually distorted, gregarious, 1–2 cm. broad; surface white to fawn-colored or brownish, floccose, spongy, usually powdered with the brownish chlamydospores; margin involute, thick: context thick, fleshy, grayish-white, of farinaceous taste and odor; lamellae thick, dull-grayish, distant, adnate, usually undeveloped: spores not seen; chlamydospores large, stellate, brownish, 15–20 μ: stipe pruinose, white to brownish, stuffed or hollow, brown within, 1.5–2.5 cm. long, 3–8 mm. thick.

TYPE LOCALITY: Bavaria.
HABITAT: On decaying *Russula*, *Lactaria*, *Chanterel*, *Clitocybe*, and other large species of agarics.
DISTRIBUTION: Eastern United States and Cuba; also in Europe.
ILLUSTRATIONS: Schaeff. Fung. Bavar. 4: *pl. 279;* Bull. Herb. Fr. *pl. 166;* Sturm, Deuts. Fl. Pilze 3: *pl. 53;* Sow. Engl. Fungi *pl. 383;* Pers. Champ. Comest. *pl. 1.*
EXSICCATI: Sydow, Myc. Mar. *2813.*

5. **TROGIA** Fries, Gen. Hymen. 10. 1836.

Hymenophore membranous, deeply infundibuliform or tubular, putrescent; hymenium plicate, veil none: spores hyaline: stipe central, usually tough.

Type species, *Chanterel aplorutis* Mont.

1. **Trogia cinerea** Pat. Bull. Soc. Myc. Fr. **18** : 172. 1902.

Pileus membranaceous, infundibuliform, 8–10 mm. high and nearly as broad; surface cinereous, glabrescent; margin inrolled: lamellae simple, equal, decurrent, numerous, very narrow, obtuse and somewhat canaliculate, 0.5 mm. wide, pale reddish-brown, pruinose: spores ovoid or subglobose, smooth, hyaline, 6–7 μ: stipe cylindric, elongate, regular, central, 2–3 cm. long, 1–2 mm. thick, glabrous, whitish, solid, the mycelium forming a small white disk at the base.

TYPE LOCALITY: Guadeloupe.
HABITAT: On rotten peduncles of *Hoffmannia tubiflora.*
DISTRIBUTION: Known only from the type locality.

6. CHANTEREL[1] Adans. Fam. Pl. 2: 11. 1763.

Merulius Hall. Hist. Stirp. Helv. 3: 150. 1768.
Turbinellus Earle, Bull. N. Y. Bot. Gard. 5: 407. 1909.

Hymenophore fleshy, putrescent; pileus convex, depressed, or infundibuliform; lamellae fold-like, obtuse, usually much forked, veil wanting: spores hyaline or ochraceous: stipe central, fleshy.

Type species, *Agaricus Chantarellus* L.

Pileus white or pallid.
  Pileus 1 cm. or less broad.
    Lamellae white. 1. *C. pruinosus.*
    Lamellae bright-yellow. 2. *C. pulchrifolius.*
  Pileus more than 1 cm. broad.
    Surface tomentose and appressed-squamulose. 3. *C. behringensis.*
    Surface glabrous, subzonate. 4. *C. Petersii.*
Pileus some shade of yellow.
  Pileus deeply umbilicate or infundibuliform.
    Sporophore rather thin, of medium size, 2–5 cm. broad and less than 10 cm. high. 5. *C. infundibuliformis.*
    Sporophore thick, 5–10 cm. broad and 10–18 cm. high. 6. *C. floccosus.*
  Pileus convex or depressed.
    Pileus small, 1–2.5 cm. broad. 7. *C. minor.*
    Pileus larger, 3–5 cm. or more broad.
      Surface luteous, lamellae concolorous. 8. *C. Chantarellus.*
      Surface pale-orange, lamellae bright-orange. 9. *C. alectorolophoides.*
Pileus some shade of red.
  Lamellae white or tinged with red, paler than the pileus.
    Stipe concolorous with the pileus; spores 3.5 μ. 10. *C. rosellus.*
    Stipe paler than the pileus; spores 4–5 μ. 11. *C. Morgani.*
  Lamellae red, concolorous with the pileus.
    Hymenophore pale-red throughout. 12. *C. Wrightii.*
    Hymenophore cinnabar-red throughout. 13. *C. cinnabarinus.*
Pileus some shade of brown or dark-gray.
  Pileus umbonate. 14. *C. muscoides.*
  Pileus umbilicate or infundibuliform.
    Surface glabrous, lamellae strictly dichotomous; stipe subfusiform. 15. *C. mexicanus.*
    Surface flocculose, lamellae irregularly branched; stipe equal. 5. *C. infundibuliformis.*

1. Chanterel pruinosus Peck, Ann. Rep. N. Y. State Mus. 28: 51. 1876.

Pileus small, convex, obtuse or subumbilicate, 4–6 mm. broad; surface white, pruinose: lamellae simple, long-decurrent, distant: stipe slender, slightly thickened above, whitish, thin: pruinose, 2.5 cm. long.

TYPE LOCALITY: Sageville, New York.
HABITAT: In pastures.
DISTRIBUTION: Known only from the type locality.

2. Chanterel pulchrifolius Peck, Bull. Torrey Club 29: 71. 1902.

Pileus thin, convex or slightly depressed, 1 cm. broad; surface glabrous, white; margin distantly and obscurely ciliate: lamellae simple, unequal, distant, decurrent, bright-yellow: spores hyaline, ellipsoid, 8 × 4–5 μ: stipe subequal, glabrous, white, hollow, 1–1.5 cm. long, 1 mm. thick.

TYPE LOCALITY: Idaho.
HABITAT: Decayed wood.
DISTRIBUTION: Known only from the type locality.

3. Chanterel behringensis Berk. & Curt. Proc. Am. Acad. 4: 119. 1858.

Pileus plane, otherwise resembling *C. alecterolophoides* in general form; surface grayish-white, tomentose, appressed-squamulose: lamellae adnate, decurrent, forked, rather thin: stipe slender, enlarged above.

TYPE LOCALITY: Bering Strait.
DISTRIBUTION: Known only from the type locality.

[1] Commonly written *Cantharellus*, or sometimes *Cantarellus*, here regarded as variant spellings.

4. **Chanterel Petersii** Berk. & Curt. Ann. Mag. Nat. Hist. III. 4: 294. 1859.

Pileus small, circular, centrally stipitate, depressed, 2.5 cm. broad; surface dealbate, opaque, subzonate, glabrous; margin concolorous, involute: context thin, white; lamellae decurrent, distant, moderately broad, interveined: spores ovoid, smooth, hyaline, obliquely apiculate, 8–9 × 5–6 μ: stipe slender, 2.5 cm. long, 2 mm. thick, terete, equal, glabrous-dealbate.

TYPE LOCALITY: Alabama.
HABITAT: Among mosses at the base of red cedar trees, apparently attached to dead wood.
DISTRIBUTION: Alabama.
EXSICCATI: Rav. Fungi Car. 5: *12*.

5. **Chanterel infundibuliformis** (Scop.) Fries, Epicr. Myc. 366. 1838.

Merulius infundibuliformis Scop. Fl. Carn. ed. 2. 2: 462. 1772.
Peziza undulata Bolt. Hist. Fung. *pl. 105, f. 1.* 1789.
Elvela tubaeformis Bull. Herb. Fr. *pl. 461.* 1789.
Elvela hydrolips Bull. Herb. Fr. *pl. 465, f. 2.* 1789.
Elvela cantharelloides Bull. Herb. Fr. *pl. 473, f. 3.* 1789.
Agaricus cantharelloides Sow. Engl. Fungi *pl. 47.* 1790.
Chanterel cinereus Pers. Neues Mag. Bot. 1: 106. 1794.
Merulius cinereus Pers. Ic. Descr. Fung. 1: 10. 1798.
Merulius villosus Pers. Ic. Descr. Fung. 1: 17. 1798.
Merulius tubiformis Fries, Obs. Myc. 1: 97. 1815.
Merulius cinereus leucophaeus Pers. Myc. Eur. 2: 15. 1825.
Chanterel tubaeformis lutescens Fries, Epicr. Myc. 366. 1838.
Chanterel leucophaeus Fries, Epicr. Myc. 367. 1838.
Chanterel lutescens Sacc. Syll. Fung. 5: 490. 1887.
Chanterel sphaerosporus Peck, Bull. Torrey Club 25: 323. 1898. (Type from Newfoundland.)

Pileus fleshy-membranaceous, becoming umbilicate or infundibuliform, gregarious or cespitose, 1.5–5 cm. broad; surface flocculose, even or subzonate, varying in color from yellow to cinereous or dark watery-brown, paler when dry, margin undulate or lobed: context thin, concolorous, mild, edible; lamellae decurrent, distant, narrow, irregularly branched or forked, thick, yellowish to dull-lilac or cinereous, becoming pruinose: spores broadly ellipsoid, pale-yellowish, smooth, 8–10 × 7–8 μ: stipe terete, slender, equal, glabrous, hollow, yellow, rarely fuliginous, 3–7 cm. long, 3–7 mm. thick.

TYPE LOCALITY: Carniola.
HABITAT: In damp woods or shaded swamps on much decayed wood or in soil rich in humus.
DISTRIBUTION: Canada to the Bahamas and west to Minnesota; also in Europe.
ILLUSTRATIONS: Vaillant, Bot. Paris. *pl. 11, f. 9, 10;* Bull. Herb. Fr. *pl. 473, f. 3; pl. 465, f. 2; pl. 461;* Hussey, Ill. Brit. Myc. 2: *pl. 21;* Pers. Ic. Descr. Fung. 1: *pl. 6, f. 1; pl. 3, f. 3;* Sow. Engl. Fungi *pl. 47;* Mem. N. Y. State Mus. 3: *pl. 56, f. 1–16.*
EXSICCATI: Roum. Fungi Sel. *4009, 3108, 5701;* D. Sacc. Myc. Ital. *806;* Cooke, Fungi Brit. *226;* Rab.-Wint. Fungi Eur. *2939;* Herpell, Präp. Hutpilze *133;* Ellis & Ev. N. Am. Fungi *2504;* Krieger, Fungi Sax. *666;* Roum. Fungi Gall. *4010;* Thüm. Myc. Univ. *1606;* Sydow, Myc. Mar. *3502;* Allesch. & Schn. Fungi Bavar. *52;* Romell, Fungi Scand. *3;* Zahlbr. Krypt. *302;* Westend. Herb. Crypt. Belge *1086.*

6. **Chanterel floccosus** Schw. Trans. Am. Phil. Soc. II. 4: 153. 1832.

Chanterel princeps Berk. & Curt. Ann. Mag. Nat. Hist. III. 4: 293. 1859. (Type from Maine.)

Pileus elongated trumpet-shaped to funnel-shaped, closed at the top when very young, becoming deeply infundibuliform, firm, fleshy, gregarious to subcespitose, 5–14 cm. broad, 10–18 cm. high; surface floccose, with persistent or evanescent scales, bright-yellow when young, some shade of orange when mature, fading at times; margin concolorous, rarely tinged with lilac, undulate, involute when dry: context thin, white, sweet, edible; hymenium cremeous at first, then ochraceous, rarely pale-umber tinged with lilac, finally ochraceous-brown throughout; lamellae thick, close, narrow, decurrent, repeatedly forked, branching or anastomosing: spores ellipsoid, smooth, ochraceous, 14 × 7 μ: stipe short, glabrous or hairy, whitish at the base when young, becoming cremeous or ochraceous.

TYPE LOCALITY: Pocono Mountains, Pennsylvania.
HABITAT: Damp places in dense coniferous or deciduous woods.

DISTRIBUTION: Eastern United States from Maine to Alabama and west to Colorado.
ILLUSTRATIONS: Mem. N. Y. State Mus. 3: *pl. 55, f. 1–9;* N. Marsh. Mushr. Book *pl. 45;* Ann. Rep. N. Y. State Mus. 33: *pl. 1, f. 18, 20.*
EXSICCATI: Ellis & Ev. N. Am. Fungi *1920;* Shear, N. Y. Fungi *20.*

7. **Chanterel minor** Peck, Ann. Rep. N. Y. State Cab. **23**: 122. 1872.

Pileus thin, fleshy, convex to expanded, irregular or depressed at times, gregarious, 1–2.5 cm. broad; surface glabrous, subrugose, ochraceous to orange; margin inrolled at first, entire or repand: context thin, pallid, mild, at length faintly peppery; lamellae decurrent, distant, very narrow, often forking, but seldom anastomosing, concolorous: spores ovoid, somewhat one-sided, smooth, hyaline with a faint yellowish tinge, 8–9 × 4–5 μ: stipe slender, cylindric, equal, glabrous, shining, slightly striate at times, concolorous, usually solid, 2–5 cm. long, 2–4 mm. thick.

TYPE LOCALITY: Greenbush, New York.
HABITAT: On the ground in deciduous woods.
DISTRIBUTION: Massachusetts to Alabama in the eastern United States; reported also from Ohio, Wisconsin, and Minnesota.
ILLUSTRATIONS: Bull. N. Y. State Mus. 131. *pl. 116, f. 12–17.*

8. **Chanterel Chantarellus** (L.) Murrill.

Agaricus Chantarellus L. Sp. Pl. 1171. 1753.
Merulius Cantharellus Scop. Fl. Carn. ed. 2. **2**: 461. 1772.
Chanterel flavescens Lam. Encyc. 1: 694. 1785.
Chanterel cibarius Fries, Syst. Myc. 1: 318. 1821.

Pileus fleshy, firm, turbinate, nearly plane, sometimes depressed, gregarious, cespitose at times, 3–8 cm. broad; surface glabrous, luteous, rarely paler yellow, margin involute to expanded, undulate: context white, nutty or slightly acrid, edible; lamellae thick, narrow, distant, decurrent, forked or irregularly anastomosing, luteous, or sometimes much paler: spores ellipsoid, somewhat irregular, smooth, pale-ochraceous, 8–10 × 4–5 μ: stipe 2.5–5 cm. long, 6–12 mm. thick, attenuate below, glabrous, concolorous or paler, solid.

TYPE LOCALITY: Sweden.
HABITAT: On the ground in deciduous or coniferous woods.
DISTRIBUTION: Throughout the temperate regions of North America, Europe, and Asia.
ILLUSTRATIONS: Atk. Stud. Am. Fungi *f. 123;* Ann. Rep. N. Y. State Mus. **48**: *pl. 32;* Gibson, Edible Toadst. *pl. 19;* Bull. Herb. Fr. *pl. 62;* Sow. Engl. Fungi *pl. 46;* Hussey, Ill. Brit. Myc. 1: *pl. 4.*
EXSICCATI: Rav. Fungi Car. **2**: *7;* J. Kunze, Fungi Sel. *201;* Ellis & Ev. N. Am. Fungi *1918;* Westend. Herb. Crypt. Belge *340;* P. Karst. Fungi Fenn. *106;* Cavara, Fungi Longob. *18;* Linhart, Fungi Hung. *350;* Sydow, Myc. Mar. *707;* Krieger, Fungi Sax. *1161;* Underw. & Cook, Illust. Fungi *6;* Herpell, Präp. Hutpilze *17;* Cooke, Fungi Brit. *602.*

9. **Chanterel alectorolophoides** (Schaeff.) Murrill.

Agaricus alectorolophoides Schaeff. Fung. Bavar. 3: *pl. 206.* 1770.
Agaricus aurantiacus Wulf. in Jacq. Misc. Austr. **2**: 101. 1781. Not *A. aurantiacus* Secr. 1769.
Merulius cantharelloides Pers. in J. F. Gmel. Syst. Nat. **2**: 1430. 1791.
Merulius nigripes Pers. Syn. Fung. 489. 1801.
Agaricus subcantharellus Sow. Engl. Fungi *pl. 413.* 1814.
Chanterel aurantiacus Fries, Syst. Myc. 1: 318. 1821.
Chanterel Ravenelii Berk. & Curt. Ann. Mag. Nat. Hist. II. **12**: 425. 1853.

Pileus compressed, hemispheric to funnel-shaped, convex to expanded, plane to depressed, fleshy, flexible, gregarious to subcespitose, 3–6 cm. broad; surface subtomentose, pale-orange, often darker at the center, margin involute, entire to undulate: lamellae decurrent, crowded, narrow, rather thin, regularly and 2–4 times dichotomous, bright-orange: spores ellipsoid, smooth, hyaline, 5–7 × 3–4 μ: stipe usually central, cylindric, enlarged below, slightly ascending, 2–5 cm. long, 4–7 mm. thick, subglabrous above, tomentose below, stuffed, subconcolorous, varying to pallid or dark-brown.

TYPE LOCALITY: Bavaria.
HABITAT: In woods on decayed wood, or on soil rich in humus.
DISTRIBUTION: Throughout Europe and temperate North America, south to South Carolina and Nevada.
ILLUSTRATIONS: Bull. Herb. Fr. *pl. 505, f. 2;* Atk. Stud. Am. Fungi *f. 124, 125;* Bull. Chicago Acad. Sci. 7: *pl. 7;* Schaeff. Fung. Bavar. 3: *pl. 206;* Jacq. Misc. Austr. *pl. 14, f. 3.*
EXSICCATI: Ellis, N. Am. Fungi *1202;* Karst. Fungi Fenn. *228, 421;* Sydow, Myc. Mar. *810, 1414;* Herpell, Präp. Hutpilze *71.*

10. **Chanterel rosellus** Peck, Ann. Rep. N. Y. State Mus. **42**: 120. 1889.

Pileus small, thin, regular, infundibuliform, 8–16 mm. broad; surface glabrous, pale-roseous: context thin, white; lamellae long-decurrent, dichotomous, crowded, narrow, white tinged with roseous: spores hyaline, $3.5 \times 2.5\,\mu$: stipe slender, often flexuous, equal, subglabrous, concolorous, solid, 2.5 cm. long, 2 mm. thick.

TYPE LOCALITY: North Elba, New York.
HABITAT: Mossy ground in spruce woods.
DISTRIBUTION: Known only from the type locality.

11. **Chanterel Morgani** Peck, Bot. Gaz. **7**: 43. 1882.

Pileus thin, expanded or depressed and subinfundibuliform, 1.5–2.5 cm. broad; surface red, glabrous; margin involute: lamellae decurrent, dichotomously branched, narrow, whitish: spores minute, subellipsoid, 4–5 μ long: stipe equal or enlarged above, paler than the pileus, solid, 2–3 cm. long, 2.5–5 mm. thick.

TYPE LOCALITY: Vermont.
HABITAT: On coniferous logs beneath conifers.
DISTRIBUTION: Known only from the type locality.

12. **Chanterel Wrightii** Berk. & Curt. Ann. Mag. Nat. Hist. III. **4**: 294. 1859.

Pileus plane to depressed, 1–3.5 cm. broad; surface pale-red, subglabrous; margin undulate: lamellae decurrent, glaucous-red, interveined: spores oblong-ellipsoid, smooth, pale-ochraceous, $8–10 \times 3.5–4.5\,\mu$: stipe enlarged above, striate, reddish, solid, 3–4 cm. long, 4 mm. thick.

TYPE LOCALITY: Connecticut.
DISTRIBUTION: Known only from the type locality.

13. **Chanterel cinnabarinus** Schw. Trans. Am. Phil. Soc. II. **4**: 153. 1832.

Agaricus cinnabarinus Schw. Schr. Nat. Ges. Leipzig 1: 73. 1822.
Hygrophorus cinnabarinus Sacc. Syll. Fung. **5**: 414. 1887.

Pileus firm, thin, fleshy, convex to depressed or somewhat infundibuliform, often irregular in the larger specimens, gregarious or scattered, 1.5–3 cm. broad; surface smooth or slightly rugose, of soft compacted fibers, opaque, cinnabar-red, fading somewhat in the field and entirely in the herbarium; margin at first inflexed, undulate to lobed, concolorous: context whitish, tinged externally with red, thin, taste varying from mild to slightly acrid; lamellae long-decurrent, forked, interveined, distant, narrow, concolorous or slightly paler than the surface: spores ellipsoid, smooth, hyaline, $8–9 \times 5\,\mu$: stipe cylindric or tapering downward, terete, glabrous, smooth or slightly striate, concolorous, solid, 2–5 cm. long, 4–7 mm. thick.

TYPE LOCALITY: North Carolina.
HABITAT: On the ground in deciduous or coniferous woods.
DISTRIBUTION: New England to Alabama and west to Indiana and Ohio; also in Mexico, Jamaica, and the Bahamas.
ILLUSTRATION: Mem. N. Y. State Mus. **3**: *pl. 55, f. 1–8.*
EXSICCATI: Rav. Fungi Car. 2: *8;* Ellis & Ev. N. Am. Fungi *1917;* Thüm. Myc. Univ. *507.*

14. **Chanterel muscoides** (Wulf.) Murrill.

Agaricus muscoides Wulf. in Jacq. Misc. Austr. **2**: 109. 1781.
Merulius umbonatus Pers. in J. F. Gmel. Syst. Nat. **2**: 1430. 1791.
Chanterel umbonatus Fries, Syst. Myc. 1: 317. 1821.
Chanterel dichotomus Peck, Ann. Rep. N. Y. State Cab. **23**: 123. 1872.

Pileus obconic, usually umbonate, convex to expanded, often depressed, fleshy, flexible, gregarious, 1.5–4 cm. broad; surface flocculose to glabrous, usually smooth, dry, varying from light to dark grayish-brown, margin regular, involute, concolorous: context white, thin, mild, edible; gills decurrent, white or yellowish-white, becoming reddish when wounded, close, regular, more or less dichotomous: spores narrowly ellipsoid,

smooth, hyaline, 8–10 × 4 μ: stipe 3–8 cm. long, 4–8 mm. thick, equal or tapering upward, subglabrous, solid, whitish tomentose at the base, white or colored like the pileus above.

TYPE LOCALITY: Austria.
HABITAT: In woods among mosses or among grasses in bushy places.
DISTRIBUTION: New Brunswick to North Carolina and west to Michigan; also in Europe.
ILLUSTRATIONS: Ann. Rep. N. Y. State Cab. **23**: *pl. 4, f. 6–9;* Bull. N. Y. State Mus. 67: *pl. 84, f. 8–21;* Jacq. Misc. Austr. *pl. 16, f. 1.*
EXSICCATI: Ellis & Ev. N. Am. Fungi *1919;* Sydow, Myc. Mar. *1149.*

15. **Chanterel mexicanus** Fries, Nova Acta Soc. Sci. Upsal. III. **1**: 227. 1855.

Pileus fleshy, turbinate-infundibuliform, 3–4 cm. broad; surface glabrous, grayish-fuscous; margin thin, undulate-crisped: lamellae long-decurrent, strictly dichotomous, interveined, very narrow: stipe subfusiform, attenuate below, firm, solid, 4 cm. long.

TYPE LOCALITY: Mirador, Mexico.
HABITAT: On the ground.
DISTRIBUTION: Known only from the type locality.

DOUBTFUL SPECIES

Chanterel brevipes Peck, Ann. Rep. N. Y. State Mus. **33**: 21. *pl. 1, f. 18–20.* 1880. Described from specimens collected in woods near Ballston, New York, and found again at North Elba, New York, eighteen years later. It does not appear to be sufficiently distinct from *C. floccosus.*

Chanterel lignatilis Berk. & Curt. Ann. Mag. Nat. Hist. III. **4**: 294. 1859. Described from specimens collected by Ravenel on rotten trunks in South Carolina. Type specimens are to be found in the Farlow Herbarium, but our knowledge of the species is still unsatisfactory.

7. **POLYOZELLUS** Murrill, gen. nov.

Hymenophore cespitose-multiplex, fleshy, putrescent; hymenium plicate, veil none: spores hyaline: stipe short, thick.

Type species, *Chanterel multiplex* Underw.

1. **Polyozellus multiplex** (Underw.) Murrill.

Chanterel multiplex Underw. Bull. Torrey Club **26**: 254. 1899.

Hymenophore large, irregular, cespitose-multiplex, 12–20 cm. high; pilei compound, more or less flabelliform, 3–5 × 3–5 × 0.5–1 cm.; surface dull-purple or purplish lead-colored, becoming blackish on drying; margin thin, light-colored, irregular or lobed: context purple, tender, brittle, of mild taste and aromatic odor; hymenium radiately venulose-reticulate with irregular cross veinlets, cinereous in herbarium specimens; spores hyaline, 5–6 μ in diameter: stipe thick, compact, often deeply grooved above, subconcolorous, blackening on drying, 2–4 cm. long.

TYPE LOCALITY: Mt. Desert, Maine.
HABITAT: Dense spruce and fir woods, probably attached to buried wood.
DISTRIBUTION: Known only from two collections at the type locality.
ILLUSTRATION: Bull. Torrey Club **26**: 254. 1899.

DOUBTFUL SPECIES

Neurophyllum ochraceum Pat. in Duss, Enum. Champ. Guad. 38. 1903. (*Chanterel ochraceus* (Pat.) Sacc. & D. Sacc. in Sacc. Syll. Fung. 17: 36. 1905.) This species was described from specimens collected by Père Duss on dead wood in woods in Guadeloupe. If incorporated into the above genus, the generic description would have to be somewhat modified. The species is characterized as follows:

Pileus rigid, ligneous, flabellate, applanate, convolute, incisely lobed, more or less imbricate; lobes 8–12 cm. long, ochraceous-rufescent, velutinous, smooth or undulate-tuberculate; margin rounded, thin, straight or inflexed: hymenium of obtuse veins, simple or branched, long-decurrent, crowded, narrow: spores ochraceous, ovoid, verrucose, 16–20 × 6–10 μ; cystidia none: stipe hard, cylindric below, canaliculate above, 3–5 cm. long, the entire sporophyte 10–15 cm. high.

8. **PLICATURELLA** Murrill, gen. nov.

Hymenophore sessile or subsessile, subfleshy: lamellae obtuse, fold-like, not covered with a veil: spores ferruginous.

Type species, *Chanterel olivaceus* Schw.

1. **Plicaturella olivacea** (Schw.) Murrill.

Chanterel olivaceus Schw. Trans. Am. Phil. Soc. II. 4: 153. 1832.

Pileus subfleshy, dimidiate, subimbricate, slightly depressed, 2.5–4 cm. broad, 3–4 mm. thick, sessile or attached by a short thick stipe, which is black and strigose; surface yellowish-green, pulverulent or finely pubescent, margin subinflexed, undulate or lobed: context homogeneous, olivaceous, fragile when dry, 2.5–3 mm. thick: lamellae anastomosing, dichotomous or branched, crowded, rather broad, orange-yellow to reddish-brown: spores ovoid, smooth, ferruginous, $5 \times 4\,\mu$.

TYPE LOCALITY: Salem, North Carolina.
HABITAT: On the ground (probably attached to roots) and on hemlock logs.
DISTRIBUTION: North Carolina and Tennessee.

Chloroneuron

9. ~~CHLOROPHYLLUM~~ **CHLOROPHYLLUM** Murrill, gen. nov.

Hymenophore fleshy-tough, putrescent; pileus depressed; lamellae fold-like, obtuse, anastomosing, veil wanting: spores green; cystidia present: stipe central.

Type species, *Neurophyllum viride* Pat.

neuron

1. **Chloro~~phyllum~~ viride** (Pat.) Murrill.

Neurophyllum viride Pat. Jour. de Bot. 2: 406. 1888.

Pileus fleshy-tough, circular in outline, depressed at the center, deeply lobed, centrally stipitate, 6–8 cm. broad, 10–12 cm. high; surface dark-green, glabrous, margin very irregular: lamellae thick, plicate, numerous, anastomosing, branched, decurrent, dark-green: spores ovoid, at first smooth, later covered with anastomosing ridges, yellowish-green, $13–14 \times 6–7\,\mu$; cystidia cylindric, obtuse, projecting, containing at the apex some green granules: stipe central, concolorous, fibrous, villose near the base, gradually expanding upward, 8–15 mm. thick.

TYPE LOCALITY: French Guiana.
HABITAT: On the ground or upon dead wood in wet woods.
DISTRIBUTION: French Guiana and Martinique.
ILLUSTRATION: Pat. Tab. Anal. *no. 650.*

Tribe **2. LACTARIEAE.**[1] Hymenophore convex at first, expanding, sometimes becoming infundibuliform, stipitate, terrestrial or rarely on decaying logs, or on tree-trunks; context fleshy, vesiculose, continuous in the pileus, stipe and trama, sometimes lactiferous, often acrid in taste, putrescent: hymenium lamelloid, lamellae acute on the edge, brittle, adnate or only slightly decurrent; stipe central or rarely eccentric, fleshy, never fibrous, solid or stuffed, becoming hollow, without annulus or volva: spores white or yellow, globose to broadly elliptic, often echinulate.

Context lactiferous. 10. LACTARIA.
Context not lactiferous. 11. RUSSULA.

10. **LACTARIA**[2] Pers. Tent. Disp. Fung. 63. 1797.

Lactifluus Roussel, Fl. Calvados ed. 2. 66. 1806.
Galorrheus Fries, Syst. Orb. Veg. 75. 1825.
Lactariella Schröt. Krypt. Fl. Schles. 3^1: 544. 1889.
Gloeocybe Earle, Bull. N. Y. Bot. Gard. 5: 409. 1909.

Pileus fleshy, continuous with the stipe; surface sometimes zonate, either dry or viscid, glabrous, velvety, or tomentose; margin involute in young plants, then spreading or

[1] BY GERTRUDE SIMMONS BURLINGHAM.

[2] Often written *Lactarius*, here regarded as a mere variant spelling.

uplifted, naked or more or less tomentose: context brittle, vesiculose, lactiferous, mild or acrid in taste; latex white or colored, of the consistency of milk, or if watery, tinged with white, or colorless; lamellae brittle, rather thin, with acute edges, unequal in length, often forking, and often becoming darker and pruinose as the plant matures; stipe central, never fibrous, sometimes becoming hollow: spores white or yellow, globose to elliptic, in many instances echinulate. The plants for the most part grow on the ground in woods, although a few species grow on decaying logs.

Type species, *Agaricus piperatus* L.

Latex white at first.
Pileus glabrous, smooth or torn or areolate, the margin naked or tomentose.
Surface not viscid when wet (certain species of XII and XIII often appear to lack viscidity).
Latex very acrid.
Pileus white or whitish. I. PIPERATAE.
Pileus dark-colored. II. RUSTICANAE.
Latex mild.
Flesh thick; stipe stout; wounds unchanging or becoming brownish. XVII. LACTIFLUAE.
Flesh thin; stipe slender; wounds unchanging or becoming yellow. XVIII. CAMPHORATAE.
Surface viscid.
Latex unchanging, though wounds may become greenish.
Viscidity slimy, persisting for a time; latex very acrid.
Margin entirely naked.
Pileus some shade of yellow. IV. INSULSAE.
Pileus some shade of gray, umber, or reddish. V. TRIVIALES.
Margin at first minutely tomentose. VI. AGGLUTINATAE.
Viscidity thin, soon disappearing; latex mild to subacrid.
Pileus mahogany, brownish-drab, to fulvous. XII. QUIETAE.
Pileus some shade of gray. XIII. CINEREAE.
Latex becoming lilac or staining the flesh lilac. VIII. ASPIDEAE.
Latex becoming yellow.
Margin downy-tomentose at first; surface slimy-viscid when moist; latex acrid. IX. CROCEAE.
Margin naked or pruinose at first; surface thinly-viscid when wet, soon dry; latex usually subacrid. XI. THEIOGALAE.
Pileus not glabrous.
Surface not viscid when wet.
Latex very acrid; lamellae neither darker nor pruinose with age.
Surface velvety-tomentose, white or whitish; latex unchanging or becoming yellow. I. PIPERATAE.
Surface scabrous-hairy, olivaceous. II. RUSTICANAE.
Latex usually mild or tardily acrid; lamellae darker and pruinose with age.
Pileus minutely tomentose or squamulose.
Pileus testaceous to fulvous or isabelline. XIV. HELVAE.
Pileus some shade of gray. XV. GRISEAE.
Pileus pruinose to velvety.
Pileus some shade of brown, putty-color, or white; latex or wounds sometimes becoming salmon or yellow. XVI. PLINTHOGALAE.
Pileus some shade of fulvous; wounds sometimes becoming brownish. XVII. LACTIFLUAE.
Surface viscid when wet.
Latex very acrid, unchanging or becoming yellow.
Surface more or less covered with long tomentum. III. TORMINOSAE.
Surface covered with short tomentum, or papillate-squamulose. VI. AGGLUTINATAE.
Latex subacrid to mild, becoming lilac or staining the flesh lilac. VII. SPECIOSAE.
Latex bright-colored from the first.
Pileus glabrous, viscid. X. DELICIOSAE.
Pileus velvety, dry. XVI. PLINTHOGALAE.

I. PIPERATAE

Plants large, the pileus 4–15 cm. broad; margin at length spreading.
Pileus glabrous.
Latex white, not staining the wounds.
Flesh thick; lamellae dichotomously forking, about 2 mm. broad. 1. *L. piperata.*
Flesh thin; lamellae very close, about 1 mm. broad. 2. *L. pergamena.*
Latex white, drying glaucous-green on the lamellae and broken flesh. 3. *L. glaucescens.*
Pileus velvety-tomentose.
Latex white, unchanging; lamellae distant. 4. *L. vellerea.*
Latex white, becoming yellow at least where in contact with the broken flesh; lamellae close. 5. *L. subvellerea.*
Pileus glabrous in the center, having a cottony-roll on the margin, the urface sometimes torn. 6. *L. deceptiva.*

Plants small, the pileus up to 5 cm. broad; margin involute, minutely silky. 7. *L. involuta.*

II. RUSTICANAE

Pileus glabrous, at least at first, gray to brown with lilac tints; lamellae thin, not staining. 8. *L. rusticana.*
Pileus scabrous-hairy, olivaceous-green; lamellae staining dark-green. 9. *L. atroviridis.*

III. TORMINOSAE

Latex white, unchanging.
  Pileus some shade of yellow, usually zonate, glabrous in the center. 10. *L. torminosa.*
  Pileus white to flesh-colored tinged with fuscous, azonate, the center tomentose. 11. *L. cilicioides.*
Latex white, becoming yellow.
  Pileus yellowish, zonate to subzonate; stipe scrobiculate-spotted. 12. *L. scrobiculata.*
  Pileus white, azonate; stipe sometimes spotted but not scrobiculate. 13. *L. resima.*

IV. INSULSAE

Pileus zonate; spores yellowish. 14. *L. insulsa.*
Pileus azonate; spores white. 15. *L. affinis.*

V. TRIVIALES

Latex staining the lamellae glaucous-green.
  Pileus gray to yellowish-gray, becoming paler in the center, sometimes livid; spores yellow. 16. *L. trivialis.*
  Pileus sepia, becoming paler toward the margin; spores white. 17. *L. mucida.*
Latex not staining the lamellae.
  Pileus gray, zoned with raw-umber, fading to gray. 18. *L. circellata.*
  Pileus dark dull-red, occasionally zonate. 19. *L. hysgina.*

VI. AGGLUTINATAE

Pileus buff, papillate when wet, squamulose when dry. 20. *L. agglutinata.*
Pileus whitish, zonate, sparsely covered with coarse, short tomentum. 21. *L. lanuginosa.*
Pileus olivaceous-umber, blackening in drying, azonate, glabrous or agglutinated-fibrous. 22. *L. turpis.*

VII. SPECIOSAE

Pileus whitish to honey-colored, zoned with darker yellow; latex white, scanty in mature plants, staining the wounded flesh or lamellae heliotrope. 23. *L. speciosa.*
Pileus dull-yellow, azonate; latex very abundant, white, then watery, then lilac. 24. *L. representanea.*

VIII. ASPIDEAE

Pileus yellow.
  Pileus azonate; latex acrid. 25. *L. aspidea.*
  Pileus zonate; latex bitter. 26. *L. aspideoides.*
Pileus gray.
  Pileus faintly zoned or azonate, up to 8 cm. broad. 27. *L. lividorubescens.*
  Pileus conspicuously zoned and spotted, 7–12 cm. broad. 28. *L. maculata.*

IX. CROCEAE

Pileus saffron yellow to orange-cadmium; latex becoming yellow-cadmium, very scanty. 29. *L. crocea.*
Pileus maize-yellow tinted with yellowish-salmon; latex becoming sulfur-yellow, scanty. 30. *L. delicata.*

X. DELICIOSAE

Latex orange-colored. 31. *L. deliciosa.*
Latex saffron-yellow. 32. *L. Chelidonium.*
Latex dark-red. 33. *L. subpurpurea.*
Latex indigo-colored. 34. *L. Indigo.*

XI. THEIOGALAE

Latex mild, bitterish, then acrid, becoming sulphur-yellow.
  Pileus pinkish-buff to terra-cotta or fulvous and zonate, or pallid and azonate. 35. *L. theiogala.*
  Pileus whitish, azonate, the entire plant becoming brownish-red with age. 36. *L. colorascens.*
Latex very acrid, becoming golden-yellow. 37. *L. chrysorhea.*

XII. QUIETAE

Latex mild.
  Pileus 5–15 cm. broad, rarely viscid, not shining; flesh thick. 38. *L. quieta.*
  Pileus 2–4 cm. broad; flesh thin.
    Pileus mahogany-red, shining-viscid when moist. 39. *L. nitida.*
    Pileus fulvous, fading, papilla persisting dark. 40. *L. oculata.*
    Pileus brownish-drab to yellowish-brown, fading. 41. *L. paludinella.*

Latex acrid.
Lamellae not staining where broken ; pileus fulvous, the margin crenate to sulcate. 42. *L. minuscula.*
Lamellae staining glaucous-green ; pileus umber, sometimes tinged with lilac, fading, the margin entire. 43. *L. parva.*

XIII. CINEREAE

Latex white, not staining the lamellae ; pileus plainly viscid when moist. 44. *L. cinerea.*
Latex staining the lamellae glaucous-green ; viscidity present only in wet weather. 45. *L. varia.*

XIV. HELVAE

Pileus floccose-squamulose, testaceous, fading to isabelline ; latex watery and mild or subacrid, rarely white, aromatic ; plants medium sized to large. 46. *L. helva.*
Pileus squamulose, fulvous to isabelline ; latex white, acrid, odorless ; plants small. 47. *L. alpina.*
Pileus coarse-velvety, brick-red to reddish terra-cotta, zonate ; latex white, acrid. 48. *L. Peckii.*
Pileus usually apparently glabrous, though minutely flocculose at first, red ; latex very acrid.
Pileus umbonate. 49. *L. rufa.*
Pileus without an umbo ; plants cespitose. 50. *L. rufula.*

XV. GRISEAE

Plants without odor.
Pileus azonate, gray to smoke-gray, minutely tomentose becoming floccose-tomentose ; latex slowly acrid ; pileus up to 5 cm. broad. 51. *L. grisea.*
Pileus azonate, blue-black, then zoned with slate-gray, or finally with snuff-brown, scabrous-pubescent ; latex acrid ; pileus not exceeding 15 mm. in diameter. 52. *L. Bensleyae.*
Plants more or less aromatic.
Odor very pronounced ; pileus gray to pinkish-gray, minutely tomentose at first, never floccose, rarely zonate ; latex slowly acrid ; flesh lax. 53. *L. glyciosma.*
Odor slight ; pileus dark-gray mixed with umber, minutely tomentose, never floccose, sometimes zonate ; latex acrid ; flesh firm. 54. *L. Hibbardae.*

XVI. PLINTHOGALAE

Latex white, if changing not becoming yellow.
Spores yellow.
Latex or wounds becoming salmon-pink.
Pileus snuff-brown or paler, pruinose. 55. *L. plinthogala.*
Pileus dark-brown, velvety. 56. *L. ligniota.*
Latex and wounds not changing color. 57. *L. Sumstinei.*
Spores white ; latex and wounds not changing color. 58. *L. Gerardii.*
Latex white, becoming yellowish ; pileus subtomentose. 59. *L. subtomentosa.*
Latex salmon-colored from the first ; pileus whitish. 60. *L. salmonea.*

XVII. LACTIFLUAE

Pileus entirely glabrous.
Pileus azonate. 61. *L. lactiflua.*
Pileus zonate. 62. *L. ichorata.*
Pileus pruinose-velvety.
Lamellae distant, not staining brown where injured. 63. *L. hygrophoroides.*
Lamellae close.
Wounds staining brownish.
Pileus Vandyke-brown to dead-leaf-colored, usually corrugated. 64. *L. corrugis.*
Pileus yellowish-buff, smooth or very slightly rugose. 65. *L. luteola.*
Wounds not staining brown ; pileus golden-fulvous. 66. *L. subvelutina.*

XVIII. CAMPHORATAE

Pileus azonate.
Latex white, unchanging.
Odor aromatic in drying, taste mild ; pileus red-brown. 67. *L. camphorata.*
Odor none, taste subacrid to bitterish. 69. *L. subdulcis.*
Latex watery or whey-colored.
Pileus brownish terra-cotta, fading, areolate. 68. *L. rimosella.*
Pileus not becoming areolate.
Margin even. 70. *L. seriflua.*
Margin crenate to sulcate ; plants small. 67. *L. camphorata fragilis.*
Latex white, becoming yellowish or staining the lamellae yellow ; pileus yellowish-buff. 71. *L. isabellina.*
Pileus zonate when moist, rather large. 72. *L. mutabilis.*

I. **Piperatae.** Pileus without a pellicle, never viscid, glabrous or tomentose; margin involute at first varying from naked to densely tomentose: context firm; lamellae neither becoming darker nor pruinose with age; latex very acrid, white, unchanging or in some species staining the lamellae yellow or glaucous-green in drying.

1. **Lactaria piperata** (L.) Pers. Tent. Disp. Fung. 64. 1797.

Agaricus piperatus L. Sp. Pl. 1173. 1753.
Agaricus Listeri With. Brit. Pl. ed. 2. **3**: 288. 1792.

Pileus fleshy, convex-umbilicate, at length infundibuliform, 4–12 cm. or more in diameter; surface white, azonate, dry, glabrous; margin involute at first and naked, at length uplifted: context compact, white, unchanging or becoming sordid, edible; latex white, unchanging, very acrid, abundant; lamellae white or creamy-white, forking dichotomously, close, more or less decurrent, arcuate at first, then extending upwards, only about 2 mm. broad; stipe white, equal, dry, often pruinose, solid and firm, 2–8 cm. long, up to 2 cm. thick: spores white, subglobose, nearly smooth, 8–9 μ in diameter.

TYPE LOCALITY: Sweden.
HABITAT: Oak woods or groves.
DISTRIBUTION: Temperate North America and Europe.
ILLUSTRATIONS: Atk. Stud. Am. Fungi *f. 119*; Barla, Champ. Nice *pl. 22, f. 1–5*; Bull. Herb. Fr. *pl. 200* (as *Agaricus acris*); Cooke, Brit. Fungi *pl. 979*; Fries, Sv. Aetl. Svamp. *pl. 27*; Lanzi, Funghi Mang. *pl. 54, f. 2, a, b, c*; McIlv. Am. Fungi *pl. 41, f. 1*; Schaeff. Fung. Bavar. *pl. 83* (as *Agaricus amarus*); Bull. Conn. Geol. Nat. Hist. Surv. **3**: *pl. 9*.
EXSICCATI: Burl. Lact. N. Am. *1*; Rav. Fungi Car. **2**: *5 p. p.*; Roum. Fungi Gall. *3819*.

2. **Lactaria pergamena** (Sw.) Fries, Epicr. Myc. 340. 1838.

Agaricus pergamenus Sw. Sv. Vet.-Akad. Nya Handl. **30**: 90. 1809.

Pileus fleshy, thin, convex to plane or depressed, often irregular and eccentric, and usually flexuous, 4–11 cm. broad; surface white to creamy-white when old, azonate, dry, glabrous, minutely wrinkled; margin becoming extended, naked: context pliant, white, edible; latex white, unchanging or sometimes drying sulphury-white, abundant, acrid; lamellae white then straw-colored, very close, thin, forking, adnate, horizontal, very narrow, 1 mm. broad; stipe white, equal or tapering downwards, glabrous, smooth, stuffed, but firm: spores white, minutely echinulate, elliptic, $6 \times 8 \mu$.

TYPE LOCALITY: Sweden.
HABITAT: Oak woods.
DISTRIBUTION: United States east of the Mississippi; also in Europe.
ILLUSTRATIONS: Batsch, Elench. Fung. *pl. 13, f. 59, a, b, c* (as *Agaricus piperatus*); Cooke, Brit. Fungi *pl. 978*; Gill. Champ. Fr. *pl. 152* (*389*);[1] Krombh. Abbild. *pl. 57, f. 1–6*; Lucand, Champ. Fr. *pl. 42*.
EXSICCATI: Burl. Lact. N. Am. *2*.

3. **Lactaria glaucescens** Crossl. Naturalist **1900**: 5. 1900.

Pileus fleshy, convex-umbilicate, then infundibuliform, 4–9 cm. broad; surface white, becoming stained or spotted with yellowish-buff, dry, glabrous; margin involute at first, even, naked: context firm, thick, whitish, staining glaucous-green where the latex dries; latex white, drying glaucous-green on the flesh and lamellae, very acrid, abundant; lamellae maize-yellow at first, becoming white as the pileus expands, staining glaucous-green where the latex dries, forked, very close, adnate, 1–1.5 mm. wide; stipe white, tapering downwards or sometimes nearly equal, solid, firm, 3–9 cm. long, 1.5 cm. thick at the base to 2 cm. thick at the apex: spores white, globose, minutely and sparsely echinulate, 5.5–7 μ in diameter; cystidia terete-clavate, $40–60 \times 7–8 \mu$.

TYPE LOCALITY: West Yorkshire, England.
HABITAT: On the ground in sandy loam or in vegetable soil, oak-chestnut woods.
DISTRIBUTION: North Carolina, 1000 meters elevation; also in England.
ILLUSTRATIONS: Mem. Torrey Club **14**: 25. *f. 1*; Naturalist **1900**: 10. *f. 1–3*.
EXSICCATI: Burl. Lact. N. Am. *5*.

[1] The plates in Gillet, Champ. Fr. were renumbered in 1890 and again upon the completion of the work. In citation the original numbers are followed by the numbers occurring in the subsequent revisions.

4. **Lactaria vellerea** Fries, Epicr. Myc. 340. 1838.

Agaricus vellereus Fries, Syst. Myc. 1 : 76. 1821.

Pileus fleshy, thick, convex-umbilicate, at length extending, depressed in the center, 6–11 cm. broad ; surface whitish, tinged in places with grayish or yellowish, dry, minutely tomentose ; margin inrolled then spreading : context firm, white, staining yellowish, possibly poisonous ; latex white, unchanging, or if creamy soon becoming white again, acrid ; lamellae whitish, becoming cream-colored or yellowish, changing to brownish where injured, many forking near the stem, interveined, shorter lamellae often joining with longer, distant, appearing more so with age or in larger specimens, adnate to slightly decurrent, 2–5 mm. broad ; stipe whitish, tinged in places with yellow, equal or rounded at the base, pruinose-velvety, 3–4 cm. long, 12–18 mm. thick : spores white, globose to ovate or elliptic, with only a few scattering blunt spines, uniguttulate, 5–6 × 8 μ.

TYPE LOCALITY : Sweden.
HABITAT : Open deciduous woods.
DISTRIBUTION : Eastern United States from Maine to Alabama ; also in Europe.
ILLUSTRATIONS : Barla, Champ. Nice *pl. 22, f. 6–8 ;* Bres. Funghi Mang. *pl. 67 ;* Bull. Herb. Fr. *pl. 538, f. G, H, N ;* Cooke, Brit. Fungi *pl. 980 ;* Gill. Champ. Fr. *pl. 153* (*400*) ; Hussey, Ill. Brit. Myc. 1 : *pl. 63 ;* Krombh. Abbild. *pl. 57, f. 10–13 ;* Lanzi, Funghi Mang. *pl. 54, f. 1 ;* Sow. Engl. Fungi *pl. 104* (as *Agaricus Listeri*) ; Bull. Conn. Geol. Nat. Hist. Surv. **3** : *pl. 9.*
EXSICCATI : Burl. Lact. N. Am. *3 ;* Rav. Fungi Car. **2** : *5, p. p. ;* Roum. Fungi Gall. *3819.*

5. **Lactaria subvellerea** Peck, Bull. Torrey Club **25** : 369. 1898.

Pileus fleshy, convex, soon umbilicate, at length nearly infundibuliform, 7.5–15 cm. broad ; surface white, becoming tinged or spotted with yellowish, and when dried cinnamon-colored, azonate, dry, covered with velvet-like tomentum ; margin at first and for some time involute, at length spreading : context thin, amber-white, odor faint ; latex pale cream-colored or whitish, becoming yellowish in drying, very acrid, abundant ; lamellae white to pale cream-colored, staining amber-white where the latex dries, often forking, adnate or slightly decurrent, narrow ; stipe white, tapering slightly toward the base, dry, velvety-pubescent, firm, 1.8–2.8 cm. long, 1.2–2.5 cm. thick : spores subglobose, smooth, 6–6.5 × 6.5–7.5 μ.

TYPE LOCALITY : Alabama.
HABITAT : On dry ground, mixed woods, oaks and chestnuts predominating.
DISTRIBUTION : Alabama and North Carolina.

6. **Lactaria deceptiva** Peck, Ann. Rep. N. Y. State Mus. 38 : 175. 1884.

Pileus fleshy, convex-umbilicate, then expanded and centrally depressed or somewhat infundibuliform, 5–15 cm. broad ; surface white or whitish, dry, glabrous at first, becoming torn into fibers and cracked as the pileus matures ; margin involute at first and covered with a dense soft cottony tomentum which fills in the space between the margin and the stem, then spreading or elevated and more or less fibrillose : context firm, white, edible ; latex white, unchanging, acrid ; lamellae whitish or cream-colored, some forking, rather distant, adnate or decurrent, somewhat broad ; stipe white, nearly equal, pruinose-pubescent, solid, 2–8 cm. long, 10–40 mm. thick : spores white, globose to elliptic, echinulate, 8–9 × 9–12 μ.

TYPE LOCALITY : New York.
HABITAT : On the ground in woods, especially near hemlock trees, rarely in oak-chestnut woods.
DISTRIBUTION : Ontario, and Eastern United States from Maine to Alabama.
ILLUSTRATIONS : Atk. Stud. Am. Fungi *f. 120, 121* (as *Lactaria resima*) ; Ann. Rep. N. Y. State Mus. **54** : *pl. 70, f. 7–11 ;* Bull. Conn. Geol. Nat. Hist. Surv. **3** : *pl. 8.*
EXSICCATI : Burl. Lact. N. Am. *4 ;* Shear, N. Y. Fungi *19.*

7. **Lactaria involuta** Soppitt ; Cooke, Handb. Brit. Fungi ed. 2. 380. 1883.

Pileus fleshy, convex, then plane or slightly depressed, 2–5 cm. broad ; surface white with pale-ochraceous tinge, dry, smooth, glabrous ; margin arched, involute, extreme edge

minutely silky: context firm; latex white, unchanging, very acrid, not scanty; lamellae white, sometimes forked, densely crowded, somewhat decurrent, about 1 mm. broad; stipe white, equal or thickened below, glabrous, smooth, solid, 2.5 cm. long, 6 mm. thick: spores white, pip-shaped, smooth, 3–5 × 5–7 μ.

TYPE LOCALITY: England.
HABITAT: On the ground in woods or in grassy places on the edge of woods.
DISTRIBUTION: Connecticut to Alabama.
ILLUSTRATION: Cooke, Brit. Fungi *pl. 1194.*

II. **Rusticanae.** Pileus without a pellicle, never viscid, though moist in some species, glabrous to scabrous-hairy, always dark in color, varying from gray to brown or reddish-brown tinted with lilac, or sometimes dark-green: context compact; lamellae neither becoming darker nor pruinose with age; latex usually very acrid, white and unchanging, although the wounds sometimes change color.

8. **Lactaria rusticana** (Scop.) Burl. Mem. Torrey Club **14**: 27. 1908.

Agaricus rusticanus Scop. Fl. Carn. ed. 2. **2**: 452. 1772.
Agaricus pyrogalus Bull. Hist. Champ. Fr. 487. 1809.
Lactaria pyrogala Fries, Epicr. Myc. 339. 1838.

Pileus fleshy, broadly convex, then plane to somewhat depressed, 3.5–6.5 cm. broad; surface gray to livid-gray or brownish-gray, darker in the center, zoned toward the margin, moist in wet weather but not viscid, glabrous; margin glabrous, inrolled, then arched in mature specimens: context firm, thick, white, unchanging, poisonous; latex white, unchanging, very acrid; lamellae cream-colored to ochroleucous, rarely forking, distant, adnate, up to 5 mm. broad; stipe silver-gray, paler than the pileus, nearly equal, sometimes tapering downwards, glabrous, smooth, compact, 3–5 cm. long, 6-16 mm. thick: spores white, globose to subglobose, echinulate, greenish-hyaline, 6–6.5 × 6–8 μ; cystidia transparent, 16–20 μ long, 5-10 μ at the base, abruptly tapering.

TYPE LOCALITY: Carniola.
HABITAT: On open grassy places in woods.
DISTRIBUTION: Vermont to Ohio and Maryland; also in Europe.
ILLUSTRATIONS: Bull. Herb. Fr. *pl. 529, f. 1;* Gill. Champ. Fr. *pl. 52 (162; 390)*; Krombh. Abbild. *pl. 14, f. 1–9;* Lanzi, Funghi Mang. *pl. 55, f. 2, a, b, c, d.*
EXSICCATI: Burl. Lact. N. Am. *10.*

9. **Lactaria atroviridis** Peck, Ann. Rep. N. Y. State Mus. **42**: 119. 1889.

Pileus fleshy, nearly plane, soon depressed in the center, 6–10 cm. broad; surface olivaceous, azonate, dry, scabrous-hairy, sometimes cracking into small areas; margin involute, at length spreading to uplifted: context compact, white; latex white, staining the lamellae green after some time, acrid; lamellae whitish, becoming mottled with green, especially where injured, sometimes forking near the stem, close, adnate to slightly decurrent, rather narrow; stipe colored like the pileus or paler, spotted, equal, dry, glabrous, firm, soon hollow, 2–5 cm. long, 1–2 cm. thick: spores creamy-white, subglobose, echinulate, 7–8 μ in diameter.

TYPE LOCALITY: New York.
HABITAT: Deciduous woods.
DISTRIBUTION: New York to the District of Columbia.

III. **Torminosae.** Pileus rather broad; margin inrolled at first and covered with long coarse tomentum which may be persistent or fugacious, surface whitish to yellowish, viscid when wet: context subcompact; latex white, unchanging, or changing to yellow, intensely acrid; lamellae neither becoming darker nor pruinose with age.

10. **Lactaria torminosa** (Schaeff.) Pers. Tent. Disp. Fung. 64. 1797.

Agaricus torminosus Schaeff. Fung. Bavar. **4**: 7 (index). 1774.
Lactaria villosa Clements, Bot. Surv. Neb. **4**: 20. 1896.

Pileus fleshy, convex, depressed in the center, finally nearly infundibuliform, 4–10 cm. broad; surface pale pinkish-yellow or pale-ochroleucous or ochraceous tinged with incarnate,

often zoned with deeper color, sometimes nearly white and azonate, viscid when wet, center glabrous; margin involute at first, then merely deflexed, persistently covered with long white tomentum: context, firm, white, not changing color, poisonous; latex white, unchanging, very acrid; lamellae whitish or cream-yellow tinged with pale-incarnate, some forking near the stem, close, decurrent, thin, 5 mm. broad; stipe paler than the pileus, sometimes faintly spotted with yellow, equal or tapering downwards, glabrous or pruinose, smooth, stuffed, becoming hollow, 3–7 cm. long, 2 cm. or less thick: spores white, broadly elliptic, echinulate, uniguttulate, hyaline, 6–8 × 8–10 μ.

TYPE LOCALITY: Bavaria.
HABITAT: In deciduous or coniferous woods, in open or shady places.
DISTRIBUTION: Maine to Alabama and west to Colorado and Nebraska; also in Europe.
ILLUSTRATIONS: Atk. Stud. Am. Fungi *f. 118;* Barla, Champ. Nice *pl. 18, f. 7–10;* Britz. Hymen. Südb. Lact. *f. 5;* Bull. Herb. Fr. *pl. 529, f. 2* (as *Agaricus Necator*); Cordier, Champ. Fr. *pl. 27, f. 1;* Fries, Sv. Aetl. Svamp. *pl. 28;* Gill. Champ. Fr. *pl. 51* (*159; 395*); Krombh. Abbild. *pl. 13, f. 15–23;* Lanzi, Funghi Mang. *pl. 57, f. 2, a, b, c, d;* F. Lorinser, Essb. Schwämme *pl. 8, f. 8;* Lucand, Champ. Fr. *pl. 972;* Noulet & Dassier, Traité Champ. *pl. 17, f. B;* Phoebus, Deuts. Krypt. Giftgew. *pl. 5;* Richon & Roze, Atl. Champ. *pl. 37, f. 1–6;* Schaeff. Fung. Bavar. *pl. 12;* Sicard, Hist. Nat. Champ. *pl. 43, f. 232;* Sv. Bot. *pl. 184;* Sow. Engl. Fungi *pl. 103.*
EXSICCATI: Burl. Lact. N. Am. *6;* Clements, Crypt. Form. Colo. *364;* Herpell, Präp. Hutpilze *46;* P. Karst. Fungi Fenn. *508;* Sydow, Myc. Mar. *1504.*

11. **Lactaria cilicioides** Fries, Epicr. Myc. 334. 1838.

Agaricus tomentosus Otto, Versuch Agar. 74. 1816. Not *A. tomentosus* Bull. 1782.
Agaricus cilicioides Fries, Syst. Myc. 1: 63. 1821.

Pileus fleshy, convex, becoming plane, sometimes nearly infundibuliform, 5–10 cm. broad; surface pale-incarnate tinged with fuscous, azonate, viscid when wet, entirely covered with matted tomentum; margin involute, fibrillose-woolly: context not very firm, yellowish-white, latex white or pale yellowish-white, sometimes becoming more yellowish when exposed to the air, acrid, not abundant; lamellae white to yellowish, forking, close, decurrent, rather narrow; stipe whitish, sordid, never spotted or scrobiculate, equal, pruinose-silky when viewed with a lens, firm, stuffed, at length somewhat hollow, 5–7.5 cm. long, up to 2.5 cm. thick: spores white, minutely echinulate, broadly elliptic, 6–7 × 8 μ.

TYPE LOCALITY: Saxony.
HABITAT: Open places in or near woods.
DISTRIBUTION: New York and Vermont, and possibly Ohio and Maine; also in Europe.
ILLUSTRATIONS: Cooke, Brit. Fungi *pl. 973;* Schaeff. Fung. Bavar. *pl. 228* (as *Agaricus crinitus*).

12. **Lactaria scrobiculata** (Scop.) Fries, Epicr. Myc. 334. 1838.

Agaricus scrobiculatus Scop. Fl. Carn. ed. 2. 2: 450. 1772.
Lactaria scrobiculata Fries, Epicr. Myc. 334. 1838.

Pileus fleshy, convex, soon depressed in the center, at length infundibuliform, 6–15 cm. broad; surface yellowish to ochraceous or even reddish-yellow, azonate, or subzonate or conspicuously zonate, viscid when moist; margin at first involute and tomentose, then spreading or upturned and nearly or quite naked: context somewhat firm, poisonous; latex white, quickly changing to sulfur-yellow, acrid; lamellae whitish or pale-yellowish, sometimes forking close to the stem, crowded, adnate or slightly decurrent, thin; stipe of the same color as the pileus or paler, with brighter-colored elliptic or orbicular scrobiculate spots, equal, glabrous, hollow, 3–7 cm. long, 1–2 cm. thick: spores white, minutely echinulate, 6.5–7 × 8–10 μ.

TYPE LOCALITY: Carniola.
HABITAT: In moist woods.
DISTRIBUTION: Eastern United States from Vermont to Alabama; also in Europe.
ILLUSTRATIONS: Barla, Champ. Nice *pl. 18, f. 3–6;* Cooke, Brit. Fungi *pl. 971;* Gill. Champ. Fr. *pl. 154* (*392*); Hahn, Pilz.-Samml. ed. *2. f. 24;* Krombh. Abbild. *pl. 58, f. 1–6;* F. Lorinser, Essb. Schwämme *pl. 9, f. 6;* Lucand, Champ. Fr. *pl. 971;* Schaeff. Fung. Bavar. *pl. 227.*

13. **Lactaria resima** Fries, Epicr. Myc. 336. 1838.

Agaricus resimus Fries, Syst. Myc. 1: 75. 1821.
Lactaria regalis Peck, Ann. Rep. N. Y. State Mus. 26: 64. 1874.

Pileus fleshy, deeply umbilicate, at length infundibuliform, 8 cm. or more broad; surface whitish, soon faintly tinged with yellow, darker in the center, azonate, viscid when

wet, glabrous in the center, margin involute, at length spreading, white-tomentose for some time, then glabrous: context firm, white, having a rather strong odor when fresh; latex instantly changing to sulfur-yellow, acrid; lamellae whitish or pale-cream, a few forking near the stem, close, decurrent, about 4 mm. broad; stipe whitish, spotted with cream or dull-yellow, equal, glabrous, or pruinose at the top, stuffed, becoming hollow, 3.5 cm. long, 2.5 cm. thick: spores white, globular to elliptic, echinulate, 5–7 × 7–9 μ.

TYPE LOCALITY: Småland, Sweden.
HABITAT: In woods, chiefly in mountainous regions.
DISTRIBUTION: New York and Vermont; also in Europe.
ILLUSTRATION: Fries, Ic. Hymen. *pl. 169, f. 1.*
EXSICCATI: Burl. Lact. N. Am. *7.*

IV. **Insulsae.** Pileus broad; margin involute at first, naked or pruinose; surface some shade of yellow, very viscid when young or wet, glabrous: context firm; latex white, unchanging, very acrid; lamellae becoming neither darker with age nor pruinose.

14. **Lactaria insulsa** Fries, Epicr. Myc. 336. 1838.

Agaricus insulsus Fries, Syst. Myc. 1. 68. 1821.

Pileus fleshy, convex-umbilicate, becoming depressed in the center, 4.5–10 cm. broad; surface coppery-orange with alternating zones of deeper and lighter tones, sometimes yellowish-buff zoned with coppery-orange, center coppery-orange to red-ochre, viscid, glabrous, surface not polished, and often marked with striae like the stem of a *Russula;* margin involute at first, and remaining arched, sometimes pruinose: context firm, then somewhat lax, white, odorless, possibly poisonous; latex white, unchanging, very acrid; lamellae white, becoming dull-reddish along the margins where rubbed, frequently forking near the stipe, adnate, becoming decurrent as the pileus deepens, thin, fragile, 2 mm. broad; stipe paler than the pileus, sometimes spotted with deeper color, tapering downwards, glabrous, stuffed, then hollow, 1.5–5 cm. long, up to 10 or 12 mm. thick: spores pale Naples-yellow-globose, strongly echinulate, 7–8 μ, rarely 6 μ in diameter.

TYPE LOCALITY: Malmö, Sweden.
HABITAT: On the ground in rather open woods or by trails in mixed deciduous woods.
DISTRIBUTION: From Maine to Alabama and west to Missouri; also in Europe.
ILLUSTRATIONS: Berk. Outl. Brit. Fungol. *pl. 13, f. 2;* Bres. Funghi Mang. *pl. 62;* Cooke, Brit. Fungi *pl. 975;* Gill. Champ. Fr. *pl. 386;* Hussey, Ill. Brit. Myc. 1: *pl. 59* (as *Agaricus flexuosus*); Krombh. Abbild. *pl. 12, f. 1–6;* Lanzi, Funghi Mang. *pl. 56, f. 1, a, b, c;* Richon & Roze, Atl. Champ. *pl. 37, f. 10–12.*
EXSICCATI: Burl. Lact. N. Am. *15.*

15. **Lactaria affinis** Peck, Ann. Rep. N. Y. State Cab. 23: 116. 1872.

Lactaria platyphylla Peck, Ann. Rep. N. Y. State Cab. 23: 118. 1872.

Pileus fleshy, convex-umbilicate, then plane to depressed in the center, 6–12 cm. or more broad; surface ochraceous-yellow, azonate, very viscid in wet weather, glabrous; margin involute, then merely arched, even, naked or pruinose: context firm, white; latex white, unchanging or sometimes drying pale-greenish on the wounded lamellae, acrid; lamellae whitish or cream-colored, not changing color with age, but often becoming pruinose in drying, many forking near the stipe, not very close, adnate to slightly decurrent, 4–10 mm. broad; stipe yellowish, paler than the pileus, often spotted, nearly equal, viscid when wet, stuffed, becoming hollow, 3–6 cm. long, 10–22 mm. thick: spores whitish, globose to broadly elliptic, echinulate, 8 × 10 μ.

TYPE LOCALITY: New York.
HABITAT: On the ground in mixed balsam, spruce, and maple woods.
DISTRIBUTION: Maine, Vermont, Massachusetts, and New York.
EXSICCATI: Burl. Lact. N. Am. *16.*

V. **Triviales.** Pileus broad; margin inrolled at first and naked; surface from gray to putty-color or some shade of red, slimy viscid, glabrous: context firm; latex white, unchanging, but in some species staining the broken flesh or lamellae a pale dull-green, acrid; lamellae only slightly darker and scarcely pruinose with age.

16. **Lactaria trivialis** Fries, Epicr. Myc. 337. 1838.

Agaricus trivialis Fries, Obs. Myc. 1: 61. 1815.
Lactaria deflexa Lindblad, Monogr. Lact. Suec. 8. 1855.

Pileus fleshy, depressed in the center, then plane to infundibuliform, up to 15 cm. broad; surface plum-colored, or smoke-gray tinted with livid when young, fading, becoming putty-colored to snuff-brown, or remaining lilac-tinted in the center, azonate, viscid, glabrous; margin even, involute on the extreme edge for some time, pruinose at first: context firm, white; latex white or creamy-white, drying on the broken flesh or lamellae pale-greenish, acrid; lamellae cream-colored to yellowish, some forking, close, slightly decurrent, 5–7 mm. broad; stipe cream-yellow, nearly equal, or often inflated, glabrous, smooth, becoming hollow, 4–12 cm. long, 1–2 cm. thick: spores yellowish, elliptic, echinulate, $8 \times 11\,\mu$.

TYPE LOCALITY: Sweden.
HABITAT: In mixed or deciduous woods.
DISTRIBUTION: Eastern United States as far south as North Carolina, and Missouri; also in Europe.
ILLUSTRATIONS: Cooke, Brit. Fungi *pl. 976;* Krombh. Abbild. *pl. 14, f. 17, 18;* Lucand, Champ. Fr. *pl. 166.*
EXSICCATI: Burl. Lact. N. Am. *17.*

17. **Lactaria mucida** Burl. Mem. Torrey Club **14**: 56. 1908.

Pileus fleshy, rather thin, convex-umbilicate, then plane, and at length infundibuliform, 3–9 cm. broad; surface warm-sepia in the center, putty-colored on the extreme margin, azonate, very viscid and shining when wet, glabrous; margin even at first, slightly wavy and striate in the old plant: context rather lax, white; latex white, drying blue-greenish-gray on the lamellae and the broken flesh, acrid; lamellae white, scarcely changing color with age, sometimes forking near the stipe, close, adnate to slightly decurrent, acute at the inner end, up to 7 mm. broad; stipe of the same color as the pileus or paler, tapering upwards, slightly viscid when wet, glabrous, sometimes with faint striae, stuffed, then hollow, 4–7 cm. long, 7–10 mm. thick at the top, 10–15 mm. at the base: spores white, broadly elliptic, echinulate, $7–8 \times 8–9.5\,\mu$.

TYPE LOCALITY: Pisgah Forest, North Carolina.
HABITAT: Under hemlocks.
DISTRIBUTION: Vermont and North Carolina.
ILLUSTRATION: Mem. Torrey Club **14**: 56. *f. 7.*
EXSICCATI: Burl. Lact. N. Am. *20.*

18. **Lactaria circellata** Fries, Epicr. Myc. 338. 1838.

Agaricus circellatus Fries, Hymen. Eur. 426. 1821.

Pileus fleshy, convex-umbilicate, then plane, becoming infundibuliform, 3–7 cm. broad; surface gray to neutral-tinted, zoned and streaked with raw-umber, darker in the center, fading to gray when old, viscid in wet weather, glistening when dry, glabrous; margin even, inrolled and pruinose at first, then spreading: context firm, white, or grayish next the cuticle; latex white, unchanging, acrid; lamellae white to cream-colored, becoming ochraceous on the bruised edges, forking near the stipe, close, adnate with a decurrent tooth, appearing more decurrent with age, up to 5 mm. broad; stipe paler than the pileus, equal or tapering downwards, glabrous, smooth, firm, stuffed, at length hollow, up to 4 cm. long, 10–17 mm. thick: spores white, subglobose, slightly echinulate, somewhat hyaline, $6.5 \times 7–8\,\mu$.

TYPE LOCALITY: Europe.
HABITAT: In moist mixed woods.
DISTRIBUTION: Vermont; also in Europe.
ILLUSTRATIONS: Batt. Fung. Hist. *pl. 13, f. D;* Cooke, Brit. Fungi *pl. 990;* Gill. Champ. Fr. *pl. 380;* Sow. Engl. Fungi *pl. 203.*
EXSICCATI: Burl. Lact. N. Am. *18.*

19. **Lactaria hysgina** Fries, Epicr. Myc. 373. 1838.

Agaricus hysginus Fries, Syst. Myc. 1: 67. 1821.

Pileus fleshy, convex, then umbilicate, becoming depressed in the center, 5–8 cm. broad; surface reddish-incarnate or blood-red-brown, darker in the center, shading into

paler and even incarnate at the margin, fading with age, sometimes faintly zonate, smooth, very viscid, glabrous; margin involute then arched with the extreme edge inflexed: context firm, white in the pileus, faintly yellowish in the stipe, reddish next to the cuticle; latex white, unchanging, acrid; lamellae white or creamy-white, becoming yellowish, often forking near the stipe, close, adnate or slightly decurrent, 3–5 mm. broad; stipe paler than the pileus, or sometimes of the same color, spotted with red or reddish-brown, nearly equal, viscid when wet, glabrous, stuffed, becoming hollow: spores whitish, subglobose to elliptic, echinulate, 6–8 × 8–10 μ.

TYPE LOCALITY: Sweden.
HABITAT: In moist woods, especially near spruce trees, often in grassy places.
DISTRIBUTION: From Maine to New York, and in Michigan; also in Europe.
ILLUSTRATIONS: Cooke, Brit. Fungi *pl. 989*; Fries, Ic. Hymen. *pl. 169, f. 2*; Krombh. Abbild. *14, f. 15, 16* (as *Agaricus vietus*).
EXSICCATI: Burl. Lact. N. Am. *19.*

VI. **Agglutinatae.** Pileus rather broad; margin involute at first and covered with a very short tomentum, soon naked; surface from white to buff and umber with a greenish tinge, becoming darker colored in drying, very viscid when young or wet, varying from subglabrous to sparsely tomentose: context firm; latex white, unchanging, acrid; lamellae becoming more deeply colored and more or less pruinose with age.

20. **Lactaria agglutinata** Burl. Mem. Torrey Club **14**: 42. 1908.

Pileus convex-umbilicate, then depressed in the center, at length infundibuliform, 6–10 cm. broad; surface buff, paler when mature, slightly zonate when young, scarcely so when older, slimy-viscid when wet, with subrugose elevations or papillae showing through the gluten, appearing squamulose to squarrulose when dry; margin involute and minutely pubescent at first, the pubescence becoming less noticeable as the margin unfolds: context rather firm, white, having an odor like raw pumpkin; latex white, unchanging, acrid; lamellae yellowish-buff, some forking near the stipe, close, slightly decurrent, 2–4 mm. broad; stipe of the same color as the pileus or paler, sometimes spotted, equal or tapering downwards, viscid when wet, glabrous, firm as though solid, becoming spongy to hollow: spores creamy-white in mass, subglobose, echinulate, 7–8 μ in diameter.

TYPE LOCALITY: Pisgah Forest, North Carolina.
HABITAT: Among dead leaves, in rather sandy soil, oak-chestnut woods, frequently under the flowering dogwood.
DISTRIBUTION: Pisgah Forest, North Carolina.
ILLUSTRATION: Mem. Torrey Club 14: 41. *f. 5.*
EXSICCATI: Burl. Lact. N. Am. *11.*

21. **Lactaria lanuginosa** Burl. Mem. Torrey Club **14**: 43. 1908.

Pileus fleshy, convex-umbilicate, then expanding and depressed in the center, 7–8 cm. broad; surface whitish to yellowish-flesh-colored, zoned especially toward the margin, where the zones are close and narrow, viscid, sparsely covered with agglutinated short coarse white tomentum; margin involute at first and the extreme edge covered with fine short tomentum, at length glabrous and upturned: context firm, white, unchanging, with a somewhat strong odor; latex white, unchanging, astringent, not very acrid, scanty; lamellae whitish, at length maize-yellow to yellowish-buff, seldom forking, close, slightly decurrent, 3–5 mm. broad; stipe white becoming yellowish-buff spotted more or less with darker, equal or tapering downwards, viscid when young or wet, minutely pubescent to hairy-tomentose, then nearly glabrous, firm, stuffed, then hollow, 3 cm. long, 1–2 cm. thick: spores white, nearly globose, echinulate, 6–7 μ in diameter.

TYPE LOCALITY: Pisgah Forest, North Carolina.
HABITAT: Among dead leaves under oak, maples, alder and Rhododendron.
DISTRIBUTION: Pisgah Forest, North Carolina.
ILLUSTRATION: Mem. Torrey Club 14: 43. *f. 6.*

22. **Lactaria turpis** (Weinm.) Fries, Epicr. Myc. 335. 1838.

Agaricus Necator Pers. Syn. Fung. 435. 1801. Not *A. Necator* Bull. 1780.
Agaricus turpis Weinm. Syll. Pl. Nov. **2**: 85. 1828.
Lactaria sordida Peck, Ann. Rep. N. Y. State Cab. **23**: 119. 1872.

Pileus fleshy, thick, convex-umbilicate, then plane to depressed in the center, 6–12 cm. broad; surface yellowish-brown or umber, with olivaceous tinge, darker in the center, azonate, slimy-viscid in wet weather, glabrous or agglutinated-fibrous; margin involute at first and yellow-villose, then glabrous: context firm, whitish, with slight odor; latex white, unchanging, acrid; lamellae cream-colored, then darker yellow, becoming nearly black where bruised, then ash-colored from the spores, many forking near the stem, close, somewhat decurrent, 3–4 mm. broad; stipe of the same color as the pileus, equal or slightly smaller at the base, viscid when wet, glabrous, smooth or somewhat scrobiculate, or sometimes merely spotted, firm, stuffed, occasionally becoming hollow when old, usually 3–4 cm. long, 1.5–2.5 cm. thick: spores white, globose to subglobose, echinulate, 6.5–8 μ in diameter.

TYPE LOCALITY: Russia.
HABITAT: On the ground in mixed woods, often near fir or spruce trees.
DISTRIBUTION: Maine to Ohio and probably in North Carolina; also in Europe.
ILLUSTRATIONS: Cooke, Brit. Fungi *pl. 987*; Fl. Dan. *pl. 1913*; Fries, Sv. Aetl. Svamp. *pl. 60*; Gill. Champ. Fr. *pl. 158 (397)*; Hahn, Pilz-Samml. ed. 2. *f. 22*; Harzer, Abbild. Pilze *pl. 60*, Krombh. Abbild. *pl. 69, f. 1–6*; F. Lorinser, Essb. Schwämme *pl. 9, f. 2*; Lucand, Champ. Fr. *pl. 41*; Roum. Crypt. Ill. Champ. *f. 120*.
EXSICCATI: Burl. Lact. N. Am. *12*; P. Karst. Fungi Fenn. *306*; Sydow, Myc. Mar. *1009*.

VII. **Speciosae.** Pileus large; margin involute at first and covered with long tomentum; surface from yellowish-white to dull-yellow, zonate or azonate, viscid when young or wet, covered with rather long yellowish tomentum: context firm, thick; latex white, becoming lilac to heliotrope at least where in contact with the broken flesh, not very acrid; lamellae becoming darker and pruinose with age.

23. **Lactaria speciosa** Burl. Mem. Torrey Club **14**: 34. 1908.

Pileus fleshy, convex-umbilicate, becoming depressed in the center, 5–8 cm. broad; surface whitish, approaching honey-color or maize-yellow in the center and zoned with honey-color or maize-yellow, viscid when wet, covered with long honey-colored tomentum arranged in concentric lines corresponding to the zones; margin involute at first, at length spreading, tomentose: context firm, white, odorless; latex white, staining the flesh and lamellae heliotrope, mild to slightly acrid, abundant in young plants, scanty in old ones; lamellae white, becoming pale maize-yellow and pruinose with age, staining heliotrope where injured, seldom forking, not very close, very slightly decurrent, 5–8 mm. broad; stipe tinted with honey-yellow, with elliptic spots of flavous, sometimes scrobiculate, staining heliotrope where handled, equal, viscid when wet, sometimes slightly tomentose at the base, stuffed becoming hollow, 2.5–7 cm. long, 1–1.5 cm. thick: spores white, elliptic, strongly echinulate, 8–8.5 $\times$ 9.5–10 μ.

TYPE LOCALITY: Pisgah Forest, North Carolina.
HABITAT: In oak-chestnut woods, in sandy soil, frequently by wood-roads.
DISTRIBUTION: North Carolina, Tennessee, and Virginia, at an elevation of from 400 to 1200 meters.
ILLUSTRATION: Mem. Torrey Club **14**: 35. *f. 2*.
EXSICCATI: Burl. Lact. N. Am. *8*.

24. **Lactaria representanea** Britz. Jahresb. Nat. Ver. Augsburg **28**: 136. 1885.

Pileus fleshy, compact, broadly convex becoming plane, up to 16 cm. broad; surface dull-yellow, azonate, viscid, tomentose; margin involute for some time, tomentose: context firm, thick; latex white becoming watery, then lilac, not very acrid, very abundant; lamellae becoming dull-yellowish and pruinose, seldom forking, close, somewhat decurrent,

3–4 mm. broad; stipe flavous, spotted with brighter yellow, paler at the apex, thicker at the base, firm, 6 cm. long, 3 cm. thick: spores white, broadly elliptic, somewhat echinulate.

TYPE LOCALITY: Augsburg.
HABITAT: In mixed woods, in a moist but not wet locality.
DISTRIBUTION: Stratton, Vermont, at about 500 meters elevation; also in Europe.
ILLUSTRATION: Britz. Hymen. Südb. Lact. *f. 3.*

VIII. **Aspideae.** Pileus usually of medium size; margin involute at first varying from pruinose-downy to minutely tomentose, soon naked; surface gray or yellow, very viscid when young or wet, glabrous: context rather firm at first, then lax; latex white, staining the broken lamellae and flesh lilac, bitter to acrid; lamellae becoming somewhat darker and pruinose with age.

25. **Lactaria aspidea** Fries, Epicr. Myc. 336. 1838.

Agaricus aspideus Fries, Obs. Myc. **2**: 189. 1818.
Agaricus roseo-violascens Lasch, Linnaea **3**: 161. 1828.

Pileus fleshy, not thick, plane to convex, slightly papillate, at length depressed, 3–10 cm. broad; surface straw-colored, somewhat sordid, azonate, viscid, glabrous; margin involute at first with a zone of white silky tomentum, then entirely glabrous: context white, poisonous; latex white, changing to lilac, acrid; lamellae white or cream, rather close, somewhat thick, varying in length, here and there connected by branches, about 2 mm. broad; stipe of the same color as the pileus or paler, nearly equal, even, glabrous, stuffed, then hollow, 5–8 cm. long, up to 15 mm. thick: spores globular, echinulate, 8–10 μ in diameter.

TYPE LOCALITY: Sweden.
HABITAT: In moist places under willows, and in the border of woods.
DISTRIBUTION: New York; also in Europe.
ILLUSTRATIONS: Lanzi, Funghi Mang. *pl. 56, f. 2, a, b, c, d;* Cooke, Brit. Fungi *pl. 1083.*

26. **Lactaria aspideoides** Burl. Bull. Torrey Club 34: 87. 1907.

Pileus fleshy, convex-umbilicate, then plane, becoming infundibuliform with age, 3–4.5 cm. broad; surface sulfur-yellow with narrow zones of buttercup-yellow, very viscid when wet, having a thick and persisting gluten, glabrous; margin involute and minutely tomentose at first, then spreading and glabrous: context rather firm, whitish, changing to lilac where exposed to the air; latex white, becoming lilac where in contact with the broken flesh, bitter; lamellae whitish then cream-colored spotted with yellow, staining lilac where wounded, sometimes forking next the stipe, close, adnate, but acute at the inner end, 4 mm. broad; stipe sulfur-yellow, often spotted with buttercup-yellow, equal or abruptly smaller at the base, viscid when young or wet, glabrous, stuffed, becoming hollow, 2–3.5 cm. long, 6–10 mm. thick: spores white, globular to broadly elliptic, echinulate, 5–7 $\times$ 7–8 μ.

TYPE LOCALITY: Newfane, Vermont.
HABITAT: In grassy hillside sheep-pasture, near small fir trees.
DISTRIBUTION: Vermont.
EXSICCATI: Burl. Lact. N. Am. *13.*

27. **Lactaria lividorubescens** (Batsch) Burl. Mem. Torrey Club **14**: 49. 1908.

Agaricus lividorubescens Batsch, Elench. Fung. Contin. **2**: 51. 1789.
Agaricus uvidus Fries, Obs. Myc. **2**: 191. 1818.
Lactaria uvida Fries, Epicr. Myc. 338. 1838.
Lactaria livescens Pass. Nuovo Giorn. Bot. Ital. **4**: 105. 1872.

Pileus fleshy, rather thin, convex, then plane to depressed, often umbonate, 4–8 cm. broad; surface cinereous or brownish-gray, tinged with lilac, often faintly spotted and zonate especially when young, viscid, glabrous; margin involute at first, then spreading except the extreme edge which remains inrolled for some time and is at first white-pruinose to minutely downy: context firm then more lax, white, changing to lilac where wounded; latex white, changing to dark-lilac or violet where in contact with the flesh, acrid, some-

times bitter; lamellae white to cream, quickly changing to lilac then violet when wounded, sometimes a few forking next the stipe, close, thin, of various lengths, adnate to slightly decurrent, up to 5 mm. broad; stipe white to cream, not spotted or only obscurely so, equal or tapering upwards, a little viscid when moist, glabrous, sometimes tomentose at the base, stuffed becoming hollow, 4–8 cm. long, 6–12 mm. thick: spores white, elliptic, echinulate, 7×8–$12\ \mu$.

TYPE LOCALITY: Jena, Germany.
HABITAT: On the ground in woods, in moist places.
DISTRIBUTION: Eastern United States from Maine to Maryland; also in Europe.
ILLUSTRATIONS: Batsch, Elench. Fung. *pl. 36, f. 202*; G. Bernard, Champ. Rochelle *pl. 37, f. 1*; Britz. Hymen. Südb. Lact. *f. 16*; Cooke, Brit. Fungi *pl. 991*; Gill. Champ. Fr. *pl. 48* (*157; 399*); Pat. Tab. Fung. *pl. 209*.
EXSICCATI: Burl. Lact. N. Am. *14*.

28. **Lactaria maculata** Peck, Ann. Rep. N. Y. State Mus. **41**: 74. 1888.

Pileus fleshy, convex-umbilicate, then depressed in the center or at length infundibuliform, 7.5–12.5 cm. broad; surface gray to lilac-gray, distinctly zoned with concentrically arranged darker spots, viscid, glabrous; margin involute, naked then spreading: context firm, grayish become lilac where wounded; latex creamy-white, becoming lilac, acrid and unpleasant; lamellae whitish or cream-colored, sometimes forking, close, adnate to decurrent; stipe of the same color as the pileus or paler, spotted, equal or tapering downwards, glabrous, hollow, 2.5–5 cm. long, 10–16 mm. thick: spores subglobose, echinulate, 10–12.5 μ in diameter.

TYPE LOCALITY: New York.
HABITAT: Open woods and pastures.
DISTRIBUTION: Vermont and New York.

IX. **Croceae.** Pileus rather broad; margin involute at first and covered with a very short tomentum, soon naked; surface some shade of yellow, zonate, very viscid when young or wet: context rather compact; latex white, changing to yellow, acrid; lamellae becoming darker and more or less pruinose with age.

29. **Lactaria crocea** Burl. Mem. Torrey Club **14**: 37. 1908.

Pileus fleshy, broadly convex-umbilicate, then spreading, depressed in the center, 5–10 cm. broad; surface saffron-yellow to orange-cadmium, subzonate, expallent, very viscid when moist, glabrous; margin involute, then expanding, pruinose-downy at first, then glabrous: context brittle, whitish, staining yellow-cadmium where cut, odorless; latex white, slowly becoming yellow-cadmium, acrid; lamellae pallid, then honey-yellow, and at length yellowish-buff, becoming cadmium where cut or bruised, seldom forking, not close, adnate, 5–6 mm. broad; stipe of the same color as the pileus but paler, spotted, equal, glabrous or sometimes tomentose at the extreme base, stuffed, becoming hollow, stout, 5 cm. long, up to 16 mm. thick: spores yellowish, broadly elliptic, echinulate, 7×8–$8.5\ \mu$.

TYPE LOCALITY: Pisgah Forest, North Carolina.
HABITAT: In oak and chestnut woods, growing from vegetable mold and dead leaves.
DISTRIBUTION: North Carolina and Virginia.
ILLUSTRATION: Mem. Torrey Club 14: 38. *f. 3*.
EXSICCATI: Burl. Lact. N. Am. *9*.

30. **Lactaria delicata** Burl. Mem. Torrey Club **14**: 40. 1908.

Pileus fleshy, convex-umbilicate, at length nearly infundibuliform, 8–12 cm. broad; surface maize-yellow, tinted in the center with yellowish-salmon, faintly but decidedly zonate, viscid and covered with gluten when wet, glabrous; margin involute at first and covered with coarse short tomentum, then merely deflexed and glabrous: context firm, white, with strong odor; latex white, becoming sulfur-yellow, acrid, scanty; lamellae whitish, becoming maize-yellow with age, some forking near the stem, close, slightly decurrent, 5–7 mm. broad; stipe maize-yellow tinted with yellowish-salmon, more or less scrobiculate, spotted with the same color as the rest of the stem or duller, equal or tapering downwards,

glabrous, stuffed, becoming hollow, 4–5 cm. long, 1.5–2.5 cm. thick: spores tinted yellowish-salmon in mass, subglobose, echinulate, 7–8 μ in diameter.

TYPE LOCALITY: Pisgah Forest, North Carolina.
HABITAT: In sandy loam and dense shade, oak-chestnut woods.
DISTRIBUTION: Pisgah Forest, North Carolina.
ILLUSTRATION: Mem. Torrey Club 14: 39. *f. 4.*

X. **Deliciosae.** Pileus broad; margin involute at first and naked; surface indigo-blue or some shade of orange, viscid when wet, glabrous: context firm, edible; latex colored from the first, staining the flesh at first the same color, at length more or less greenish, acrid; lamellae usually fading with age or becoming tinged with greenish.

31. **Lactaria deliciosa** (L.) Fries, Epicr. Myc. 341. 1838.

Agaricus deliciosus L. Sp. Pl. 1172. 1753.

Pileus fleshy, convex-umbilicate, becoming plane, then infundibuliform, 5–12 cm. broad; surface orange, yellow-orange or paler, zoned with deeper orange, becoming paler with age, sometimes mixed with grayish and greenish tints, viscid when wet, glabrous, somewhat roughened; margin involute, then arched and at length upturned, glabrous: context firm, yellowish, often staining greenish next the lamellae and the exterior of the stipe, edible; latex orange to red-orange, aromatic and somewhat acrid; lamellae deep-orange with yellowish reflections, paler when old, often becoming greenish with age or where bruised, many forking near the stipe, and shorter ones branching into longer ones, often connected with cross veins at the base, close, somewhat decurrent, rather narrow; stipe of the same color as the pileus, spotted with brighter orange, nearly equal, glabrous, or sometimes a little tomentose at the base, smooth, stuffed, becoming hollow, 2.5–10 cm. long, 8–12 mm. thick: spores yellow, subglobose to elliptic, slightly echinulate, more or less hyaline, 8–8.5 $\times$ 8–11 μ.

TYPE LOCALITY: Sweden.
HABITAT: In moist woods, especially under firs and hemlocks.
DISTRIBUTION: Eastern United States from Maine to Florida, and in Colorado; also in Europe.
ILLUSTRATIONS: Atk. Stud. Am. Fungi *pl. 35, f. 1;* Badham, Escul. Mushr. Engl. *pl. 6, f. 2;* Barla, Champ. Nice *pl. 19, f. 1–5;* G. Bernard, Champ. Rochelle *pl. 39, f. 1;* Boyer, Champ. *pl. 32;* Bres. Funghi Mang. *pl. 64;* Cooke, Brit. Fungi *pl. 982:* E. & P. Nat. Pfl. 1^{1**}: *f. 110, D;* Fl. Dan. *pl. 1131;* Gibson, Edible Toadst. *pl. 18;* Gill. Champ. Fr. *pl. 49 (166; 382);* Hahn, Pilz-Samml. *f. 20;* Harzer, Abbild. Pilze *pl. 10;* Hussey, Ill. Brit. Myc. 1: *pl. 67;* Krombh. Abbild. *pl. 11;* Lanzi, Funghi Mang. *pl. 53, f. 2;* F. Lorinser. Essb. Schwämme *pl. 8, f. 5;* Lucand, Champ. Fr. *pl. 167;* McIlv. Am. Fungi *pl. 41, f. 3;* Richon & Roze, Atl. Champ. *pl. 38, f. 1–5;* Bull. Soc. Myc. Fr. 7: *pl. 2, f. 2;* Schaeff. Fung. Bavar. *pl. 11;* Sow. Engl.Fungi *pl. 202;* Fries, Sv. Aetl. Svamp. *pl. 6;* Venturi, Studi Micol. *f. 55, 56;* Vitt. Descr. Funghi Mang. *pl. 42;* Viviani, Fung. Ital. *pl. 13.*
EXSICCATI: Burl. Lact. N. Am. *21;* Herpell, Präp. Hutpilze *107;* P. Karst. Fungi Fenn. *509;* Sydow, Myc. Mar. *610.*

32. **Lactaria Chelidonium** Peck, Ann. Rep. N. Y. State Mus. **24**: 74. 1872.

Pileus fleshy, convex, then plane with the center more or less depressed, 5–8 cm. broad; surface grayish-yellow or tawny, at length stained with bluish and greenish, usually with two or three narrow zones near the margin, slightly viscid when wet, glabrous; margin involute at first and naked: context firm, whitish, staining saffron-yellow from the latex, then becoming bluish and at length greenish, edible; latex saffron-yellow, mild, scanty; lamellae saffron-yellow mixed with gray, sometimes forking, close, anastomosing at the base, adnate, then slightly decurrent, narrow; stipe of the same color as the pileus, nearly equal, glabrous, becoming hollow, 2.5–4 cm. long, 10–12 mm. thick: spores yellowish, globular to broadly elliptic, echinulate, 7 $\times$ 8–9 μ.

TYPE LOCALITY: New York.
HABITAT: Under or near pine trees, in sandy soil, or in dry spruce woods.
DISTRIBUTION: From Vermont and New York to Alabama.
ILLUSTRATION: Atk. Stud. Am. Fungi *pl. 35, f. 2.*
EXSICCATI: Burl. Lact. N. Am. *49.*

33. **Lactaria subpurpurea** Peck, Ann. Rep. N. Y. State Mus. **29**: 43. 1878.

Pileus fleshy, convex-umbilicate, then plane to infundibuliform, 3–8.5 cm. broad; surface dark-red (Indian-lake) zoned with hydrangea-pink, less noticeably zonate with age, and approaching hydrangea-pink except on the extreme margin which becomes Etruscan-red, spotted more or less with emerald-green when mature, somewhat viscid when wet, glabrous; margin involute and pruinose at first, then plane to uplifted: context somewhat firm, whitish to hydrangea-pink, instantly staining red next the lamellae and the surface of the stem, becoming greenish after some time, with a slight odor, edible; latex Morocco-red, rather mild; lamellae colored like the pileus, fading and greenish with age, seldom forking, rather distant, slightly decurrent, 6–7 mm. broad; stipe of the same color as the pileus, often spotted with dark-red, equal or tapering upwards, glabrous or pruinose, sometimes tomentose at the base, stuffed, becoming hollow, 3–7 cm. long, 8–15 mm. thick: spores yellowish, broadly elliptic, echinulate, often uniguttulate, 7–8 × 8–10 μ.

TYPE LOCALITY: New York.
HABITAT: Usually in moist woods in the vicinity of hemlocks.
DISTRIBUTION: New York, Vermont, Massachusetts, Connecticut, and North Carolina.
ILLUSTRATIONS: Ann. Rep. N. Y. State Mus. **54**: *pl. 70, f. 1–6;* Mem. Torrey Club **14**: 61. *f. 8.*
EXSICCATI: Burl. Lact. N. Am. *22.*

34. **Lactaria Indigo** (Schw.) Fries, Epicr. Myc. 341. 1838.

Agaricus (*Lactifluus*) *Indigo* Schw. Schr. Nat. Ges. Leipzig **1**: 87. 1822.

Pileus fleshy, convex-umbilicate, becoming plane to infundibuliform, 5–12 cm. broad; surface indigo-blue when wet, fading when dry, often with a grayish luster, zonate, sometimes spotted; margin naked: context firm, sky-blue to darker, often becoming greenish, edible; latex dark-blue; lamellae indigo-blue or paler, at length yellowish or sometimes tinged with green, some forking near the stipe, close, somewhat decurrent, rather broad; stipe of the same color as the pileus, often spotted, nearly equal, glabrous, smooth, firm, becoming hollow, up to 5 cm. long, 1–2 cm. thick: spores yellowish, globular to broadly elliptic, echinulate, 7 × 8–9.5 μ.

TYPE LOCALITY: North Carolina.
HABITAT: In dry pine or oak woods.
DISTRIBUTION: Eastern United States, from Vermont to Florida.
ILLUSTRATIONS: Atk. Stud. Am. Fungi *pl. 35, f. 3;* McIlv. Am. Fungi *pl. 41, f. 2.*

XI. **Theiogalae.** Pileus rather broad; margin involute at first and naked or pruinose to pruinose-downy; surface whitish to isabelline, pinkish-buff, or fulvous, slightly viscid when moist, soon dry, glabrous: context firm, thick, becoming lax and thinner; latex white, becoming yellow, bitter or acrid; lamellae becoming darker with age and more or less pruinose.

35. **Lactaria theiogala** (Bull.) Fries, Epicr. Myc. 342. 1838.

Agaricus theiogalus Bull. Hist. Champ. Fr. 495. 1809.
Hypophyllum lateritium Paulet; Paulet & Lév. Ic. Champ. 59. 1855.
Lactaria brevipes Longyear, Rep. Mich. Acad. Sci. **3**: 59. 1902.
Lactaria brevis Peck, Bull. N. Y. State Mus. 94: 33. 1905.
Lactaria xanthogalacta Peck, Bull. Torrey Club **34**: 346. 1907.

Pileus fleshy, rather thick at first, convex, sometimes with a small umbo, sometimes slightly umbilicate, then plane to depressed, 5–8 cm. broad; surface incarnate-isabelline to yellowish-salmon or reddish terra-cotta to fulvous, more or less zonate, occasionally much paler and nearly or quite azonate, viscid when wet, glossy when dry, glabrous; margin inrolled at first, and pruinose to very minutely pruinose-downy on the extreme edge: context firm, then more lax, white, becoming yellow from the latex, having a pungent odor in the fresh plant, probably poisonous; latex white, changing to sulfur-yellow, bitterish, then acrid; lamellae whitish to yellowish, reddish-brown when old or when injured, some forking near the stipe, close, adnate, or a little decurrent, up to 4 mm. broad; stipe colored like the pileus or paler, sometimes faintly spotted, glabrous, except at the base which is often slightly tomentose, smooth, stuffed and rather firm, at length hollow,

3–7 cm. long, 7–13 mm. thick: spores whitish, subglobose to broadly minutely elliptic, echinulate, 6–7 × 8–9 μ.

TYPE LOCALITY: France.
HABITAT: In both dry and moist woods, under spruce and fir trees or under oaks.
DISTRIBUTION: Maine to Alabama, and in California; also in Europe.
ILLUSTRATIONS: Barla, Champ. Nice *pl. 27, f. 14–16;* Bull. Herb. Fr. *pl. 567, f. 2;* Cordier, Champ. Fr. *pl. 27, f. 2;* Gill. Champ. Fr. *pl. 164 (396);* Krombh. Abbild. *pl. 1, f. 23, 24;* Lanzi, Funghi Mang. *pl. 32, f. 3, a, b, c;* Paulet & Lév. Ic. Champ. *pl. 71, f. 1–4;* Richon & Roze, Atl. Champ. *pl. 37, f. 7–9;* Sicard, Hist. Nat. Champ. *pl. 43, f. 233.*
EXSICCATI: Burl. Lact. N. Am. *28;* Ellis & Ev. N. Am. Fungi *1915;* Arcang. Erb. Critt. Ital. II. *807;* Herpell, Präp. Hutpilze *132.*

36. **Lactaria colorascens** Peck, Bull. N. Y. State Mus. 94: 33. 1905.

Pileus fleshy, thin, nearly plane, becoming depressed in the center, 3–5 cm. broad; surface whitish at first, becoming brownish-red with age, azonate, moist, glabrous; margin naked: latex white, becoming sulfur-yellow, bitter; lamellae whitish, becoming colored like the mature pileus, close, thin, adnate, or slightly decurrent; stipe whitish, then brownish-red, equal, even, solid, 2.5–4 cm. long, 4–6 mm. thick: spores globose, echinulate, 8 μ in diameter.

TYPE LOCALITY: Port Jefferson, New York.
HABITAT: Woods.
DISTRIBUTION: New York.

37. **Lactaria chrysorhea** Fries; Epicr. Myc. 342. 1838.

Pileus fleshy, rather thick, convex-umbilicate, then infundibuliform, 2.5–10 cm. broad; surface whitish to yellowish tinged with flesh-color, usually zoned with golden-yellow, or pale-orange, slightly viscid when moist, glabrous; margin involute at first and covered with a minute down, then spreading and naked: context firm, white, becoming yellow where injured; latex white, becoming golden-yellow, very acrid; lamellae white, then yellowish, some forking, close, adnate to slightly decurrent, thin; stipe white, then colored like the pileus, sometimes with bright colored spots, pruinose, glabrous except at the base, which is more or less villose, stuffed, then hollow, 2.5–8 cm. long, 6–15 mm. thick: spores white, subglobose, minutely echinulate, 7–8 μ in diameter.

TYPE LOCALITY: Europe.
HABITAT: Mixed woods or groves.
DISTRIBUTION: New York and North Carolina; also in Europe.
ILLUSTRATIONS: Atk. Stud. Am. Fungi *f. 122;* Cooke, Brit. Fungi *pl. 984;* Gill. Champ. Fr. *pl. 50 (151; 379);* Hahn, Pilz-Samml. ed. 2. *pl. 5, f. 20;* Krombh. Abbild. *pl. 12, f. 7–14;* Lucand, Champ. Fr. *pl. 5.*

XII. **Quietae.** Pileus of medium size to small; margin involute at first and naked; surface varying from leather-colored to fulvous or reddish, covered with a thin viscidity when moist, but soon dry, glabrous: context rather lax; latex white, unchanging, or rarely staining the lamellae greenish, mild or only slightly acrid; lamellae becoming decidedly darker with age, and dusted with spores.

In these plants the viscidity disappears so quickly that it may not be noticed in dry weather unless collected in the dew; *Lactaria quieta* is rarely found viscid.

38. **Lactaria quieta** Fries, Epicr. Myc. 343. 1838.

Agaricus quietus Fries, Syst. Myc. 1: 69. 1821.

Pileus fleshy, rather thick, depressed in the center, sometimes umbonate, 5–9 cm. broad; surface dead-leaf-colored to madder-brown, fading, obscurely zonate or azonate, rarely viscid, glabrous; margin arched, even, naked: context firm, tinged with fulvous, having a slight odor, edible; latex white, unchanging, mild or tardily acrid; lamellae white becoming buff, then pale brick-red, sometimes forking near the stipe, close, adnate to decurrent, 3–5 mm. broad; stipe dead-leaf-colored, darker at the base, equal, glabrous, smooth, stuffed, at length hollow, 5–8 cm. long, up to 15 mm. thick: spores white, echinulate, 6–7 × 8–10 μ.

TYPE LOCALITY: Sweden.
HABITAT: In deciduous or spruce and balsam woods.
DISTRIBUTION: Vermont, Massachusetts, and New York; also in Europe.
ILLUSTRATION: Cooke, Brit. Fungi *pl. 983.*
EXSICCATI: Burl. Lact. N. Am. *23.*

39. **Lactaria nitida** Burl. Bull. Torrey Club **34**: 89. 1907.

Pileus fleshy, rather thin, convex, then depressed in the center, umbonate, about 3 cm. broad; surface mahogany-red, more golden-red toward the margin, persistently dark on the umbo, otherwise fading when dry, shining viscid when wet, glabrous, smooth; margin arched for some time, naked, even: context fragile, faintly buff, turning a little reddish where cut; latex white, unchanging, mild; lamellae yellowish, becoming pruinose, sometimes forking, close, slightly decurrent, broad; stipe mahogany-red, equal or sometimes ventricose when growing in wet places, stuffed, becoming hollow, 4.5–5 cm. long, 5–8 mm. thick: spores white, echinulate, 5–6 × 6–8 μ.

TYPE LOCALITY: Vermont.
HABITAT: In grassy sheep pasture near hemlocks, and in moist woods.
DISTRIBUTION: Vermont.
EXSICCATI: Burl. Lact. N. Am. *24*.

40. **Lactaria oculata** (Peck) Burl. Bull. Torrey Club 34: 89. 1907.

Lactaria subdulcis oculata Peck, Bull. N. Y. State Mus. 67: 37. 1903.

Pileus thin, convex, then depressed in the center, umbonate, 1.5–2.5 cm. broad; surface rich-fulvous in the center, shading to buff-fulvous toward the margin, and all except the papilla fading to pinkish with age, viscid in wet weather, glabrous, smooth; margin involute and pruinose at first, then arched and finally nearly plane, slightly crenate: context fragile; latex white, unchanging, mild; lamellae whitish, then yellowish, at length pruinose, a few forking next the stipe, close, slightly decurrent, rather broad; stipe buff at the top, sublatericeous below the middle, equal, slightly viscid when wet, tomentose at the base, stuffed, up to 6 cm. long, 5 mm. thick: spores white, broadly elliptic to subglobose, echinulate, 6–7.5 × 8–9.5 μ.

TYPE LOCALITY: New York.
HABITAT: Under pine, hemlock, spruce, and balsam trees, often in moss.
DISTRIBUTION: New York and Vermont.
ILLUSTRATION: Bull. N. Y. State Mus. 67: *pl. 83, f. 20–24*.
EXSICCATI: Burl. Lact N. Am. *25*.

41. **Lactaria paludinella** Peck, Ann. Rep. N. Y. State Mus. **38**: 133. 1885.

Pileus fleshy, thin, convex, then plane-umbilicate to depressed in the center, sometimes with a small umbo, 12 mm. to 4 cm. broad; surface brownish-drab to dark-fawn, expallent, slightly viscid when wet, glabrous; margin at length slightly striate: context fragile, white or tinted with the color of the surface; latex white, unchanging, mild; lamellae white or cream-colored, becoming darker with age, pruinose, many forking near the stipe, close, adnate or slightly decurrent, thin, up to 4 mm. broad; stipe of the same color as the pileus or paler, nearly equal, glabrous except at the base which is slightly villose when growing in moss, stuffed, sometimes hollow, 2–3 cm. long, 3–4 mm. thick: spores white, subglobose, 6.5–8.5 μ in diameter.

TYPE LOCALITY: New York.
HABITAT: In marshy places in woods, in sphagnum, or among decaying leaves.
DISTRIBUTION: Vermont, New York, and North Carolina.

42. **Lactaria minuscula** Burl. Bull. Torrey Club **34**: 88. 1907.

Pileus fleshy, thin, broadly convex, with a small umbo, becoming plane, then somewhat depressed in the center, 1–3 cm. broad; surface fulvous in the center, cinnamon toward the still paler margin, azonate, viscid in wet weather, sometimes shining with viscidity, glabrous; margin minutely crenate, sometimes sulcate, often slightly wavy, pruinose at first: context fragile, isabelline-white; latex white, unchanging, acrid; lamellae whitish, seldom forking, close, adnate or decurrent by a tooth, broad for the thickness of the pileus; stipe fulvous near the base but paler toward the pileus, equal, glabrous, some-

times tomentose at the base when growing in moss, stuffed, becoming hollow, 2.5–4.5 cm. long, 3–4 mm. thick : spores white, subglobose, slightly echinulate, 6–8 μ in diameter.

TYPE LOCALITY : Newfane, Vermont.
HABITAT : In moist woods in moss or on decayed wood, under yellow birches, blackgum, and black oak.
DISTRIBUTION : Vermont, New York, and North Carolina.
ILLUSTRATION : Mem. Torrey Club **14** : 65. *f. 9, 10.*
EXSICCATI : Burl. Lact. N. Am. *26.*

43. **Lactaria parva** Peck, Ann. Rep. N. Y. State Mus. **29** : 44. 1878.

Pileus fleshy, thin, broadly convex or nearly plane, then slightly depressed in the center, sometimes with a small umbo, 1.5–5 cm. broad ; surface at first umber tinged with lilac, fading, azonate, viscid in wet weather, quickly becoming dry, glabrous ; margin inrolled and pruinose at first, then spreading, even : context fragile, tinted with umber, staining pale dull-green, then brownish where injured, odorless ; latex white, unchanging, tardily but decidedly acrid ; lamellae whitish or yellowish, becoming pale dull-green where injured, and at length brownish, some forking near the stipe, close, adnate to slightly decurrent, 2–4 mm. broad ; stipe paler than the pileus, equal or slightly tapering upwards, glabrous or merely pruinose, stuffed, 1.5–5 cm. long, 4–10 mm. thick : spores white, subglobose, slightly echinulate, 6.5–8 μ in diameter.

TYPE LOCALITY : New York.
HABITAT : On decaying wood or on the ground in low moist woods.
DISTRIBUTION : Vermont and New York.
EXSICCATI : Burl. Lact. N. Am. *47.*

XIII. **Cinereae.** Pileus of medium size ; margin involute at first, naked ; surface some shade of gray, viscid, glabrous : context lax, thin, fragile ; latex white, unchanging, or staining the broken flesh gray or greenish, soon acrid ; lamellae becoming darker and pruinose with age.

44. **Lactaria cinerea** Peck, Ann. Rep. N. Y. State Mus. **24** : 73. 1872.

Pileus fleshy, thin, convex at first, soon umbilicate to depressed in the center, at length infundibuliform, 2–7 cm. broad ; surface cinereous, darkest in the center, becoming pale toward the margin, fading, occasionally zonate, viscid when wet, glabrous ; margin involute at first, at length arched or uplifted, even : context fragile, white, not changing color ; latex white, unchanging, very acrid after a few seconds ; lamellae white, not changing color where bruised, often appearing pruinose, especially in dried plants, a few forking within 1 or 2 mm. of the stipe, close, adnate, rather narrow ; stipe of the same color as the pileus or paler, subequal but more often tapering upwards, frequently tomentose at the base, otherwise glabrous, spongy, soon hollow, 3–8 cm. long, 8–16 mm. thick : spores white, subglobose, minutely echinulate, 5.5–7 μ in diameter.

TYPE LOCALITY : New York.
HABITAT : Under beeches or among beech leaves.
DISTRIBUTION : Northeastern United States and North Carolina.
ILLUSTRATION : Mem. Torrey Club **14** : 67. *f. 11.*
EXSICCATI : Burl. Lact. N. Am. *27.*

45. **Lactaria varia** Peck, Ann. Rep. N. Y. State Mus. **38** : 126. 1885.

Pileus fleshy, thin, convex, then plane, depressed in the center, sometimes with a small umbo, 2.5–8 cm. broad ; surface smoke-gray with umber shades, sometimes faintly zonate especially toward the margin, usually dry, but probably viscid in wet weather,[1] glabrous, sometimes minutely roughened by pits which cause silvery reflections ; margin in-

[1] I have collected this species only in dry weather, but from the appearance of the pileus and its reaction when treated with water I believe it is viscid in wet weather and is related to the *Cinereae* rather than to the *Camphoratae*.

volute and pruinose at first, then spreading: context rather firm, white, odorless; latex white, unchanging, soon acrid; lamellae whitish to cream-colored, staining pale dull-greenish where wounded, some forking next the stipe, close, adnate to decurrent; stipe of the same color as the pileus or paler, equal, glabrous, stuffed, firm or spongy, 2.5–6 cm. long, 4–10 mm. thick: spores white, 7–8 μ in diameter.

TYPE LOCALITY: New York.
HABITAT: In moist places in woods or border of woods.
DISTRIBUTION: Vermont, Massachusetts, New York, and New Jersey.
EXSICCATI: Burl. Lact. N. Am. *48*.

XIV. **Helvae.** Pileus varying from small to broad; margin involute at first and glabrous except when the pileus is downy, spreading; surface bay-red to fulvous, fulvous-isabelline, and testaceous, dry, varying from velvety to flocculose, floccose-squamulose, or squamulose, at least at first: context rather thin, from firm to lax; latex white or watery, unchanging, mild to subacrid; lamellae becoming darker and pruinose with age.

In the species which are silky or tomentose at first the surface becomes nearly or quite glabrous as the pileus matures. This is especially true with *Lactaria rufa*, which is soon glabrous and shining.

46. **Lactaria helva** Fries, Epicr. Myc. 347. 1838.

Agaricus helvus Fries, Syst. Myc. 1: 72. 1821.
Lactaria aquiflua Peck, Ann. Rep. N. Y. State Mus. 28: 50. 1876.
Lactaria aquiflua brevissima Peck, Ann. Rep. N. Y. State Mus. 51: 298. 1898.

Pileus fleshy, convex, then plane to depressed, subumbonate, 5–15 cm. broad; surface testaceous to isabelline, expallent, azonate, dry, the whole surface broken up into floccose-granulose squamules, sometimes rivulose; margin involute at first, then spreading: context fragile, paler than the surface, having a sweet odor which persists in the dried plant, edible; latex white, or more often watery, mild to subacrid; lamellae white, then tinged, with incarnate, finally yellow, often forking, close, decurrent, 2–3 mm. broad; stipe pale-testaceous, equal, pruinose, pubescent at the base, stuffed, then hollow, 5–8 cm. long, 1 cm. or more thick: spores globose, echinulate, hyaline, 6–7 μ in diameter.

TYPE LOCALITY: Europe.
HABITAT: In mossy, rather wet woods or marshes.
DISTRIBUTION: Maine to Ontario and Pennsylvania, and probably in North Carolina; also in Europe.
ILLUSTRATIONS: Bres. Fungi Trid. *pl. 39, 127*; Cooke, Brit. Fungi *pl. 994*.
EXSICCATI: Burl. Lact. N. Am. *29*; Sydow, Myc. Mar. *2719*.

47. **Lactaria alpina** Peck, Ann. Rep. N. Y. State Mus. **27**: 96. 1875.

Pileus fleshy, thin, convex, then plane or depressed in the center, sometimes papillate, 1.5–4 cm. broad; surface fulvous to fulvous-isabelline, azonate, dry, minutely squamulose, especially toward the center; margin involute, then merely arched, even, naked: context rather lax, fragile; latex white, unchanging, acrid; lamellae pallid, then yellowish and pruinose, seldom forking, close, thin, decurrent, narrow; stipe of the same color as the pileus, or slightly paler, equal, dry, glabrous, stuffed, becoming hollow, 2–5 cm. long, 3–5 mm. thick: spores white, globose, echinulate, 6.5–8 μ in diameter.

TYPE LOCALITY: New York.
HABITAT: Borders of woods.
DISTRIBUTION: From Vermont and New York south to Alabama.
EXSICCATI: Burl. Lact. N. Am. *31*.

48. **Lactaria Peckii** Burl. Mem. Torrey Club **14**: 76. 1908.

Pileus fleshy, broadly convex, becoming depressed in the center, sometimes umbonate, 5–15 cm. broad; surface latericeous to reddish terra-cotta, zoned with darker tones, fading with age, dry, covered with a short tomentum somewhat like the pile on plush, at length nearly glabrous in the center and sometimes areolate; margin involute for some time then merely arched, sometimes flexuous in old plants, at first striate with darker streaks: context firm, tinted with terra-cotta; latex white, unchanging, astringent, then very acrid, abundant; lamellae pale-buff, soon becoming tinged with mineral-brown and reflecting buff

in one light and mineral-brown in another, finally becoming madder-brown, mostly entire, close, decurrent by a tooth, 3 mm. broad; stipe dull pale reddish terra-cotta, usually paler than the pileus, sometimes spotted with reddish-brown, becoming darker where bruised, nearly equal or abruptly smaller at the base, glabrous or with a whitish bloom, firm stuffed, becoming hollow, up to 4.5 cm. long, 1–2 cm. thick: spores whitish, subglobose, strongly echinulate, 7–8 μ in diameter.

TYPE LOCALITY: Pisgah Forest, North Carolina.
HABITAT: In moist grassy wood-trails and open places near brooks, in deciduous woods, oak and chestnut predominating.
DISTRIBUTION: Long Island and Staten Island, New York; North Carolina and Alabama.
ILLUSTRATION: Mem. Torrey Club 14: 77. *f. 13.*
EXSICCATI: Burl. Lact. N. Am. *30.*

49. **Lactaria rufa** (Scop.) Fries, Epicr. Myc. 347. 1838.

Agaricus rufus Scop. Fl. Carn. ed. 2. 2: 451. 1772.

Pileus fleshy, rather thin, convex, umbonate, at length infundibuliform, 5–10 cm. broad; surface bay-red to rufous, not fading, azonate, dry, minutely flocculose-silky, then glabrous and shining; margin involute at first, whitish-downy, then glabrous: context not very compact, pallid or tinged with pink, odorless, very poisonous; latex white, unchanging, very acrid; lamellae ochraceous, then rufous, sometimes forking, close, somewhat decurrent, 3 mm. broad; stipe rufous, but often paler than the pileus, nearly equal, dry, glabrous, or sometimes pruinose and downy at the base, stuffed, firm, at length sometimes hollow, 5–10 cm. long, 6–10 mm. thick: spores white, subglobose to broadly elliptic, slightly echinulate, 7–8 μ in diameter.

TYPE LOCALITY: Carniola.
HABITAT: In swamps or wet places in woods.
DISTRIBUTION: Vermont, New York, and Michigan; also in Europe.
ILLUSTRATIONS: Cooke, Brit. Fungi *pl. 985;* E. & P. Nat. Pfl. 1^{1**}: *f. 110 A;* Fries, Sv. Aetl. Svamp. *pl. 11;* Gill. Champ. Fr. *pl. 163 (391);* Hussey, Ill. Brit. Myc. 1: *pl. 15;* Krombh. Abbild. *pl. 39, f. 12–15;* Lucand, Champ. Fr. *pl. 223;* Paulet & Lév. Ic. Champ. *pl. 22* (as *Hypophyllum torminosum*); Bull. Soc. Myc. Fr. 7: *pl. 2, f. 3;* Richon & Roze, Atl. Champ. *pl. 37, f. 16–19.*
EXSICCATI: Herpell, Präp. Hutpilze *108;* P. Karst. Fungi Fenn. *226;* Krieger, Fungi Sax. *480;* Sydow, Myc. Mar. *609, 2720.*

50. **Lactaria rufula** Peck, Bull. Torrey Club 34: 346. 1907.

Pileus fleshy, broadly convex, becoming somewhat infundibuliform, without an umbo, 5–10 cm. broad; surface brownish-red, azonate, dry, apparently glabrous: context firm; latex white, unchanging, acrid; lamellae pinkish-yellow, becoming darker and pruinose with age, close, adnate; stipe colored like the pileus but paler, equal or slightly tapering upwards, sometimes with a root-like extension, often with yellowish-brown strigose hairs at the base, stuffed, 4–8 cm. long, 5–6 mm. thick: spores creamy-white, globose, verruculose, 8–10 μ in diameter.

TYPE LOCALITY: California.
HABITAT: In rich soil and leaf-mold under trees.
DISTRIBUTION: California.

XV. **Griseae.** Pileus small; margin involute at first; surface varying in color from ash-gray to nearly black, dry, minutely pubescent or tomentose, sometimes becoming floccose-squamulose, or in dried specimens appearing merely roughened: context rather firm at first, sometimes becoming lax; latex white, unchanging, acrid or tardily acrid; lamellae becoming darker with age, and more or less pruinose.

51. **Lactaria grisea** Peck, Ann. Rep. N. Y. State Cab. 23: 119. 1872.

Pileus fleshy, rather thin, broadly convex, papillate, then depressed in the center, or at length infundibuliform with or without a papilla, 1–5 cm. broad; surface varying from slate-gray to smoke-gray, becoming yellowish with age, azonate, dry, minutely tomentose, becoming floccose-tomentose, sometimes apparently squamulose to the naked eye; margin involute, then spreading, entire: context firm at first, then lax, white, not aromatic;

latex white, unchanging, slowly acrid; lamellae white, becoming cream-colored to honey-yellow, and pruinose, seldom forking, close, adnate to slightly decurrent, broader than the thickness of the pileus; stipe of the same color as the pileus or paler, nearly equal, dry, glabrous except at the base, which is sometimes pubescent, stuffed, then hollow, 1.5–6 cm. long, 3–6 mm. thick: spores white, broadly elliptic, echinulate, 6–7 × 8–9.5 μ.

TYPE LOCALITY: New York.
HABITAT: In moist, mossy places in either coniferous or deciduous woods, on the ground or on decaying logs.
DISTRIBUTION: New England, New York, and North Carolina.
ILLUSTRATION: Mem. Torrey Club 14: 80. *f. 14.*
EXSICCATI: Burl. Lact. N. Am. *32.*

52. **Lactaria Bensleyae** Burl. Bull. Torrey Club 34: 87. 1907.

Pileus fleshy, nearly flat, papillate, at length depressed in the center, 2–15 mm. broad; surface blue-black when young and moist, then zoned with slate-gray, and finally with snuff-brown toward the margin, the center remaining nearly black, dry, covered with a dense, minute, short, rather stiff pubescence; margin involute at first, and remaining recurved. context firm, gray in the pileus, buff in the stipe; latex white, unchanging, acrid; lamellae whitish, some forking near the stipe, close, slightly decurrent, 1 mm. wide or equal to the thickness of the pileus; stipe somewhat buff or putty-colored, covered more or less with a gray pruinosity, nearly equal, dry, glabrous, becoming hollow, 1 cm. or less in length, 2–3 mm. thick: spores slightly cream-colored, mostly globose, some slightly elliptic, echinulate, 5–6.5 μ, or rarely 6.5–8 μ in diameter.

TYPE LOCALITY: Newfane, Vermont.
HABITAT: In black moist soil, under yellow birch and spruce trees.
DISTRIBUTION: Vermont.
EXSICCATI: Burl. Lact. N. Am. *33.*

53. **Lactaria glyciosma** Fries, Epicr. Myc. 348. 1838.

Agaricus glyciosmus Fries, Obs. Myc. 2: 194. 1818.

Pileus fleshy, thin, convex, then expanding, umbonate, at length depressed, often without an umbo, 2–5 cm. broad; surface varying from gray to neutral gray, reddish-salmon or rosy-white, usually azonate, dry, minutely tomentose to unpolished; margin involute, then spreading, and often striate: context lax, fragile, white, aromatic; latex white, unchanging, slowly acrid; lamellae straw-colored, then ochraceous, close, slightly decurrent, 2 mm. broad; stipe of the same color as the pileus or paler and more yellowish, nearly equal, dry, glabrous or minutely downy, stuffed, becoming hollow, 2–5 cm. long, 4–8 mm. thick: spores white, globose to broadly elliptic, echinulate, 6–7 × 6–8 μ.

TYPE LOCALITY: Sweden.
HABITAT: In mixed woods, on the ground or on decaying wood.
DISTRIBUTION: Vermont, Massachusetts, New York, and Missouri.
ILLUSTRATIONS: Cooke, Brit. Fungi *pl. 1011;* Fries, Ic. Hymen. *pl. 170, f. 3.*
EXSICCATI: Burl. Lact. N. Am. *34;* Herpell, Präp. Hutpilze *47;* P. Karst, Fungi Fenn. *307.*

54. **Lactaria Hibbardae** Peck, Jour. Myc. **14**: 2. 1908.

Pileus fleshy, broadly convex or nearly plane, with or without an umbo, 1.5–5 cm. broad; surface grayish-brown tinged with pink, or a mixture of brownish-drab and mouse-color, sometimes zoned, dry, minutely tomentose or pubescent; margin involute for some time, often flexuous: context firm, whitish, usually having when rubbed a faint odor like that of *Lactaria glyciosma;* latex white, unchanging, acrid; lamellae cream-colored, some forking near the stipe, close, adnate, varying from thin to thick, rather narrow; stipe paler than the pileus, tinged with gray or pinkish-yellow, nearly equal, glabrous below, very minutely whitish-tomentose at the apex, stuffed, 2.5–6 cm. long, 3–12 mm. thick: spores white, globose, minutely echinulalate, 6–8 μ in diameter, or smaller.

TYPE LOCALITY: Massachusetts.
HABITAT: On the ground under pine or spruce and fir trees.
DISTRIBUTION: Vermont and Massachusetts.
EXSICCATI: Burl. Lact. N. Am. *35.*

XVI. **Plinthogalae.** Pileus rather broad; margin involute at first, then spreading and even or flexuous; surface varying in color from dark-brown to smoky-brown, or putty-colored, dry, pruinose to velvety: context rather firm; latex salmon-colored or white, either unchanging or changing to salmon-pink or yellow, at least where in contact with the flesh, varying from mild to acrid; lamellae becoming darker and pruinose with age.

55. **Lactaria plinthogala** (Otto) Burl. Mem. Torrey Club **14**: 84. 1908.

Agaricus azonites Bull. Hist. Champ. Fr. 497. 1809. Probably not *Lactaria azonites* Gill.
Agaricus plinthogalus Otto, Versuch Agar. 75. 1816.
Agaricus fuliginosus Fries, Syst. Myc. 1: 73. 1821.
Lactaria fuliginosa Fries, Epicr. Myc. 348. 1838.
Lactaria fumosa Peck, Ann. Rep. N. Y. State Mus. **24**: 74. 1872.
Lactariella azonites Schröt. Krypt.-Fl. Schles. 3^1: 544. 1889.

Pileus fleshy, convex, then plane, sometimes with a small umbo, depressed in the center; then subinfundibuliform, 2–6.5 cm. broad; surface raw-umber to dingy yellow-brown (café au lait), snuff-brown, or putty-colored to pallid, usually darker in the center and at first, then fading, dry, glabrous, but covered with a bloom, very smooth, sometimes wrinkled in the center when mature; margin entire or wavy: context white, changing to reddish or salmon where exposed to the air; latex white, rarely changing color except where in contact with the broken flesh, where it becomes salmon-pink, tardily acrid; lamellae nearly white at first, then maize-yellow, becoming pinkish or salmon where wounded, pruinose, sometimes forking near the stipe, and sometimes connected with vein-like reticulations, subdistant, adnate or slightly decurrent, about 5 mm. broad; stipe of the same color as the pileus, often whitish at the base, nearly equal or tapering downwards, glabrous, pruinose, stuffed but firm, then hollow, 5–7 cm. long, 6–12 mm. thick: spores yellow, mostly globular, echinulate, 6.5–10 μ in diameter.

TYPE LOCALITY: Europe.
HABITAT: In deciduous or mixed woods.
DISTRIBUTION: Maine to Alabama; also in Europe.
ILLUSTRATIONS: Atk. Stud. Am. Fungi *f. 117*; G. Bernard, Champ. Rochelle *pl. 38, f. 3*; Britz. Hymen. Südb. Lact. *f. 33a, 40*; Bull. Herb. Fr. *pl. 567, f. 3*; Cooke, Brit. Fungi *pl. 996*; Gill. Champ. Fr. *pl. 165* (*384*); Harzer, Abbild. Pilze *pl. 19*; Krombh. Abbild. *pl. 14, f. 10–12* (*f. 12* very poor); Noulet & Dassier, Traité Champ. *pl. 18, f. B.*; Pat. Tab. Fung. *pl. 322*.
EXSICCATI: Burl. Lact. N. Am. *36*; Herpell, Präp. Hutpilze *13*.

56. **Lactaria ligniota** Fries, Monogr. Hymen. Suec. **2**: 177. 1863.

Lactaria fuliginosa major Fries, Epicr. Myc. 348. 1838.
Lactariella ligniota Schröt. Krypt.-Fl. Schles. 3^1: 544. 1889.

Pileus fleshy, convex, then plane to slightly depressed, umbonate, often wrinkled in the center, 3–8 cm. broad; surface dark-brown, azonate, dry, pruinose-velvety; margin sometimes plicate: context rather firm, white, becoming pinkish or salmon where wounded; latex white, changing to salmon-pink where in contact with the broken flesh, mild or finally slightly acrid; lamellae white or ochraceous, becoming pinkish or salmon where wounded, not crowded, of various lengths, decurrent, about 5 mm. broad; stipe of the same color as the pileus, equal or abruptly smaller and plicate at the apex, smooth, pruinose-velvety, stuffed, up to 8 cm. long and 12 mm. thick: spores yellowish, globose, echinulate, 9–10 μ in diameter.

TYPE LOCALITY: Sweden.
HABITAT: On the ground in mossy wet woods, especially fir.
DISTRIBUTION: Vermont and New York to North Carolina.
ILLUSTRATIONS: Atk. Stud. Am. Fungi *f. 116*; Britz. Hymen. Südb. Lact. *f. 4*; Fries, Ic. Hymen. *pl. 171, f. 1*.
EXSICCATI: Burl. Lact. N. Am. *37*.

57. **Lactaria Sumstinei** Peck, Bull. Torrey Club **32**: 78. 1905.

Pileus fleshy, rather thin, convex, soon depressed in the center, 2.5–7.5 cm. broad; surface grayish to putty-colored, azonate, dry, glabrous, smooth or with wrinkles radiating from the center; margin involute, then arched or spreading, glabrous: context firm,

whitish, not discolored by the latex; latex white, unchanging, and not staining the flesh or lamellae, acrid; lamellae colored like the pileus, distant, thin, decurrent, 1 cm. or more broad; stipe colored like the pileus, nearly equal, rather firm, dry, glabrous, 2.5–5 cm. long, 6–12 mm. thick: spores yellow, globose, echinulate, 7.5–10 μ in diameter.

TYPE LOCALITY: Pennsylvania.
HABITAT: In grassy places in open deciduous woods.
DISTRIBUTION: Pennsylvania, District of Columbia, Virginia, and Missouri.

58. **Lactaria Gerardii** Peck, Ann. Rep. N. Y. State Mus. **26**: 65. 1874.

Pileus fleshy, convex at first, often with a small umbo, then plane or depressed, up to 10 cm. broad; surface dark seal-brown, becoming golden-brown or umber, or even paler, azonate, dry, velvety, rugose radiately from the center, sometimes becoming cracked near the margin; margin even or wavy and irregular, involute, then spreading: context firm, white, unchanging, edible; latex white, unchanging, mild, then slightly acrid; lamellae white, then cream-colored, more or less interveined, distant, appearing more so in older specimens, decurrent, not very thin, broad; stipe the same color as the pileus, velvety to the touch, equal or ventricose, stuffed, then hollow, 2.5–5 cm. long, 4–20 mm. thick: spores white, globular, echinulate, 6.5–9 μ in diameter.

TYPE LOCALITY: New York.
HABITAT: On the ground in woods or open groves.
DISTRIBUTION: From Vermont and New York as far south as North Carolina.
ILLUSTRATIONS: Ann. Rep. N. Y. State Mus. **26**: *pl. 59, f. 12–16;* Mem. N. Y. State Mus. **3**: *pl. 53, f. 12–16.*
EXSICCATI: Burl. Lact. N. Am. *38.*

59. **Lactaria subtomentosa** Berk. & Rav.; Berk. & Curt. Ann. Mag. Nat. Hist. III. **4**: 293. 1859.

Pileus convex, 5–7.5 cm. broad; surface umber-brown, dry, subtomentose: context firm; latex white, becoming yellowish, acrid; lamellae white, distant, decurrent, broad; stipe of the same color as the pileus except at the white base, hollow, 2.5 cm. long, 12 mm. thick.

TYPE LOCALITY: North Carolina.
HABITAT: On the ground in swamps.
DISTRIBUTION: North Carolina.

60. **Lactaria salmonea** Peck, Bull. Torrey Club **25**: 369. 1898.

Pileus fleshy, thin, convex, soon depressed in the center, otherwise nearly plane, 2.5–3.8 cm. broad; surface white, becoming reddish where bruised, dry, somewhat velvety; margin involute, then spreading, even: context firm, becoming salmon where wounded; latex salmon-colored; lamellae pallid, becoming darker, brownish in drying, close, adnate to decurrent; stipe white, salmon-colored within, nearly equal, occasionally eccentric, velvety, solid, about 2.5 cm. long, 3–6 mm. thick: spores subglobose, echinulate, 7.5–9 μ in diameter.

TYPE LOCALITY: Alabama.
HABITAT: In wet swampy places, usually on naked ground which has been overflowed.
DISTRIBUTION: Alabama and Mississippi.
EXSICCATI: Burl. Lact. N. Am. *39.*

XVII. **Lactifluae.** Pileus broad; margin involute at first, then spreading to uplifted, surface some shade of fulvous, dry, glabrous or velvety: context firm, rather thick, in some species becoming brown where injured; latex white, unchanging, sweetish or at least mild, abundant; lamellae becoming darker and pruinose with age.

61. **Lactaria lactiflua** (L.) Burl. Mem. Torrey Club **14**: 90. 1908.

Agaricus lactifluus L. Sp. Pl. 1172. 1753.
Agaricus oedematopus Scop. Fl. Carn. ed. 2. **2**: 453. 1772.
Agaricus testaceus Alb. & Schw. Consp. Fung. 209. 1805.
Agaricus volemus Fries, Syst. Myc. 1: 69. 1821.
Lactaria volema Fries, Epicr. Myc. 344. 1838.

Pileus fleshy, convex, then nearly plane or slightly depressed, 5–13 cm. broad; surface fulvous, buff, or brownish terra-cotta to brownish-orange, sometimes much paler, azonate,

dry, glabrous, smooth or at length rimose-rivulose; margin involute at first, then extended: context firm, thick, whitish, changing brown where exposed to the air, having a strong persisting odor, edible; latex white, unchanging, mild, sticky, abundant; lamellae creamy-white, or tinged with the same color as the pileus, becoming darker with age, changing brownish where injured, often forking 2 or 3 mm. from the stipe or midway to the margin, close, adnate, 2–5 mm. broad; stipe of nearly the same color as the pileus but paler, nearly equal, glabrous, pruinose, solid, sometimes becoming hollow, 2–10 cm. long, 1–2 cm. thick: spores white, globular, echinulate, 7–10 μ in diameter; cystidia 20–35 μ long, colorless or yellowish.

TYPE LOCALITY: Sweden.
HABITAT: In woods or groves, especially in the vicinity of oaks.
DISTRIBUTION: Eastern United States from Maine to Mississippi, and west to Indiana and Missouri; also in Europe.
ILLUSTRATIONS: Barla, Champ. Nice *pl. 20, f. 1–3;* Bel, Champ. Tarn. *pl. 23;* Boyer, Champ. *pl. 31;* Bres. Funghi Mang. *pl. 66;* Britz. Hymen. Südb. Lact. *f. 6;* Cooke, Brit. Fungi *pl. 999;* Cordier, Champ. Fr. *pl. 26, f. 2;* Ellrodt, Schwamm-Pomona *pl. 6, f. 1, 2, 3;* Fries, Sv. Aetl. Svamp. *pl. 10;* Gill. Champ. Fr. *pl. 170 (402)* (form); Hahn, Pilz-Samml. ed. 2. *pl. 4, f. 14;* Hussey, Ill. Brit. Myc. 1: *pl. 87;* Lucand, Champ. Fr. *pl. 145;* Ann. Rep. N. Y. State Mus. **48**: *pl. 30;* Pat. Tab. Fung. *pl. 323;* Bull. Soc. Myc. Fr. **7**: *pl. 2, f. 1;* Roum. Crypt. Ill. Champ. *pl. 142;* Schaeff. Fung. Bav. *pl. 5;* Venturi, Studi Micol. *pl. 6, f. 42–48;* Bull. Conn. Geol. Nat. Hist. Surv. 3: *pl. 10.*
EXSICCATI: Burl. Lact. N. Am. *40;* Herpell, Präp. Hutpilze *14;* Roum. Fungi Sel. *5223;* Sydow, Myc. Mar. *608;* Thüm. Fungi Austr. *812.*

62. **Lactaria ichorata** (Batsch) Fries, Epicr. Myc. 345. 1838.

Agaricus ichoratus Batsch, Elench. Fung. Contin. 1: 38. 1786.

Pileus fleshy, rather thin but opaque, plane to depressed in the center, 5–8 cm. broad; surface fulvous, sometimes brown in the center, zoned with testaceous, dry, glabrous, smooth; margin incurved, then spreading: context firm, then lax, pallid, becoming sordid-fuscous when exposed to the air; latex white, mild or sometimes astringent; lamellae white, then ochraceous, often forked toward the outer end, rather close, adnate, not very broad; stipe of the same color as the pileus or more yellowish, dry, glabrous, spongy-stuffed, eccentric, 5–8 cm. long: spores 6–7 $\times$ 8–10 μ.

TYPE LOCALITY: Jena, Germany.
HABITAT: On the ground in woods.
DISTRIBUTION: Ohio; also in Europe.
ILLUSTRATIONS: Batsch, Elench. Fung. *pl. 13, f. 60, a, b;* Cooke, Brit. Fungi *pl. 1000.*

63. **Lactaria hygrophoroides** Berk. & Curt. Ann. Mag. Nat. Hist. III. **4**: 293. 1859.

Lactaria distans Peck, Ann. Rep. N. Y. State Cab. **23**: 117. 1872.

Pileus fleshy, convex, then plane, depressed in the center, sometimes becoming infundibuliform, 4–10 cm. broad; surface yellowish-buff, bistre, or fulvous, azonate, dry, very minutely pruinose-velvety, appearing as though pulverulent, sometimes rugose, sometimes rimose-areolate; margin involute, then spreading or uplifted: context firm, whitish, odorless, edible; latex white, unchanging, not staining the flesh or lamellae brownish, mild; lamellae whitish to cream-colored or yellowish-buff, not discoloring where injured, not forking, distant, sometimes connected by rugose elevations, adnate to slightly decurrent, about 3 mm. broad; stipe of the same color as the pileus, nearly equal, glabrous, sometimes pruinose, stuffed and firm, 2–5 cm. long, 0.5–1.5 cm. thick: spores white, globose to broadly elliptic, minutely echinulate, 8–10 μ in diameter.

TYPE LOCALITY: Maine.
HABITAT: Mixed woods.
DISTRIBUTION: From Maine to the District of Columbia, and in Indiana, Missouri, and Mississippi.
ILLUSTRATION: Mem. N. Y. State Mus. 3: *pl. 53, f. 7–11.*
EXSICCATI: Burl. Lact. N. Am. *41.*

64. **Lactaria corrugis** Peck, Ann. Rep. N. Y. State Mus. **32**: 31. 1880.

Pileus fleshy, thick, convex, then depressed in the center, 7–12 cm. broad; surface varying in color from Vandyke-brown in the center, to mineral-brown at the margin, sometimes approaching more nearly dead-leaf-colored, azonate, dry, minutely velvety, and appearing as though covered with a bloom, more or less corrugated; margin involute at first, then arched or spreading: context firm, white, having only a slight odor, edible; latex white, unchanging, mild or slightly astringent, abundant; lamellae cinnamon when young, paler when mature or tinted with honey-yellow, becoming fulvous-brown where injured or when dried, sometimes forking, close, adnate to slightly decurrent; stipe tinted with dead-leaf-color, paler than the pileus, nearly equal, dry, pruinose in the upper portion, minutely pubescent at the base, firm, solid, 6–7 cm. long, 2–2.5 cm. thick: spores white, globose, echinulate, 9–12 μ in diameter.

TYPE LOCALITY: New York.
HABITAT: Moist woods, especially in oak-chestnut-maple woods.
DISTRIBUTION: New York to Mississippi and Missouri.
ILLUSTRATION: Atk. Stud. Am. Fungi *f. 115*.
EXSICCATI: Burl. Lact. N. Am. *42*.

65. **Lactaria luteola** Peck, Bull. Torrey Club **23**: 412. 1896.

Lactaria foetida Peck, Bull. N. Y. State Mus. 54: 949. 1902.

Pileus fleshy, broadly convex or nearly plane, somewhat depressed in the center, 5–8 cm. broad; surface whitish to yellowish-buff, azonate or sometimes with a depressed zone near the margin, dry, minutely pruinose-velvety, sometimes slightly rugose; margin involute at first, then arched or spreading: context firm, whitish, staining brown where injured; latex white, staining the flesh and lamellae brown, mild, abundant; lamellae white, then yellowish, becoming brown where injured, some forking near the stipe, close, adnate, or slightly decurrent, narrow; stipe of the same color as the pileus, nearly equal, dry, somewhat pruinose-velvety, stuffed, 2–6.5 cm. long, 6–12 mm. thick: spores white, subglobose, echinulate, 7.5–8 μ in diameter.

TYPE LOCALITY: Massachusetts.
HABITAT: Mixed woods, among fallen leaves, in dry or fairly moist soil.
DISTRIBUTION: Massachusetts, Connecticut, New York, Ohio, Missouri, Tennessee, and Mississippi.
ILLUSTRATION: Bull. N. Y. State Mus. *67*: *pl. 83, f. 7–11*.
EXSICCATI: Burl. Lact. N. Am. *50*.

66. **Lactaria subvelutina** Peck, Bull. N. Y. State Mus. 75: 18. 1904.

Pileus fleshy, convex, then nearly flat, depressed in the center, 2.5–5 cm. broad; surface golden-fulvous, dry, minutely velvety, appearing pruinose to the naked eye, sometimes wrinkled; margin inrolled, then spreading, even, or sometimes wavy: context firm, white, not staining brown; latex white, unchanging, mild; lamellae cream-colored, becoming darker with age, not staining brown where injured, a few forking, close, adnate to slightly decurrent, narrow; stipe of the same color as the pileus or paler, equal, somewhat velvety, smooth, solid, 1–2 cm. long, 4–8 mm. thick: spores white, subglobose, nearly smooth (minutely and sparsely papillate), 6.5–8 μ in diameter.

TYPE LOCALITY: New York.
HABITAT: Open places in or near woods.
DISTRIBUTION: New York, Ohio, and Missouri.

XVIII. **Camphoratae.** Pileus rather small, the margin inrolled at first and naked; surface reddish-brown, fulvous or tawny, usually smooth and polished, but in some species

becoming areolate, glabrous: context lax; latex white, unchanging, or rarely becoming yellow, sometimes thin and watery, mild or tardily acrid; lamellae becoming darker and pruinose with age.

67. **Lactaria camphorata** (Bull.) Fries, Epicr. Myc. 346. 1838.

Agaricus camphoratus Bull. Hist. Champ. Fr. 493. 1809.

Pileus fleshy, rather thin, convex, often umbonate, at length expanded, depressed in the center, 1–4 cm. broad; surface fulvous to madder-brown, azonate, dry, glabrous; margin inrolled and pruinose at first, not striate: context firm, fragile, tinged with fulvous, aromatic, edible; latex white, unchanging, mild, abundant; lamellae whitish or flesh-colored, becoming reddish-brown, sometimes a few forking next the stipe, close, adnate to slightly decurrent, rather narrow; stipe of the same color as the pileus or paler, nearly equal, sometimes flexuous, glabrous, pruinose, smooth, firm to spongy, 1–3 cm. long, 3–8 mm. thick: spores white, globose, echinulate, 6–7 μ in diameter.

TYPE LOCALITY: France.
HABITAT: Most abundant in moist mixed woods.
DISTRIBUTION: New York to Alabama.
ILLUSTRATIONS: G. Bernard, Champ. Rochelle *pl. 38, f. 2;* Bull. Herb. Fr. *pl. 567, f. 1,* Cooke, Brit. Fungi *pl. 1013, f. a;* Krombh. Abbild. *pl. 39, f. 21–24.*
EXSICCATI: Burl. Lact. N. Am. *43.*

Lactaria camphorata fragilis Burl. Mem. Torrey Club 14: 99. 1908. Surface of pileus snuff-brown or burnt-umber toward the center, not fading, pruinose, sometimes rugose in the center; margin crenate and somewhat sulcate: context thin, odor faint; latex watery, mild, abundant; lamellae maize-yellow, not crowded, about five times broader than the thickness of the pileus; stipe stuffed, becoming hollow, 2–5 cm. long, 4–6 mm. thick. In moist, rather grassy, shaded, wood trails; Pisgah Forest, North Carolina.

68. **Lactaria rimosella** Peck, Bull. N. Y. State Mus. 105: 37. 1906.

Pileus fleshy, thin, convex-umbilicate, then depressed in the center, 3–6.5 cm. broad; surface brownish terra-cotta, fading to red-brown terra-cotta, azonate, dry, glabrous, rugose from the center, then cracking into minute areas; margin involute, then arched, even, or sometimes wavy: context firm, isabelline when young, colored like the pileus when mature, having a faint odor like that of *Lactaria camphorata*, edible; latex watery or colored like skimmed milk, mild; lamellae whitish, then somewhat ochraceous, and finally colored like the pileus, a few forking near the stipe, close, decurrent, 4–6 mm. broad; stipe colored like the pileus, but not so expallent, equal or tapering upwards, pruinose at the apex, tomentose at the base, stuffed, then hollow, 2–6.5 cm. long, 5–10 mm. thick: spores white, broadly elliptic, echinulate, $7 \times 8\ \mu$.

TYPE LOCALITY: New York.
HABITAT: In mixed woods under beech trees among ferns, or on bare soil.
DISTRIBUTION: Vermont and New York.
ILLUSTRATION: Bull. N. Y. State Mus. 105: *pl. 95, f. 7–11.*
EXSICCATI: Burl. Lact. N. Am. *44.*

69. **Lactaria subdulcis** (Pers.) Fries, Epicr. Myc. 345. 1838.

Agaricus lactifluus-dulcis Bull. Herb. Fr. *pl. 224.* 1784.
Agaricus subdulcis Pers. Syn. Fung. 433. 1801.
Lactaria subdulcis Fries, Epicr. Myc. 345. 1838.
Lactaria subseriflua Longyear, Rep. Mich. Acad. Sci. **3**: 57. 1902.

Pileus fleshy, thin, convex, papillate, becoming depressed to infundibuliform, 1–5.5 cm. broad; surface fulvous, isabelline, or reddish-fulvous, not fading, azonate, dry, glabrous, smooth; margin involute, then spreading, sometimes flexuous: context firm, fragile, whitish or tinted with isabelline or fulvous, odorless, edible; latex white, unchanging, mild or slowly acrid to bitterish; lamellae whitish or tinted with isabelline, becoming pruinose, sometimes forking, close, adnate, or decurrent by a tooth, up to 3 mm. broad; stipe of the same color as the pileus or paler, nearly equal or tapering upwards, glabrous, or sometimes slightly pubescent at the base, dry, stuffed, becoming hollow, 2–7 cm. long, 2–6 mm. thick: spores white, globular to broadly elliptic, echinulate, $7 \times 8\ \mu$.

TYPE LOCALITY: Europe.
HABITAT: In woods or on the border of woods.
DISTRIBUTION: Eastern United States from Maine to Alabama, and west to Illinois and Missouri; Jamaica; also in Europe.
ILLUSTRATIONS: Bolt. Geschichte *pl. 3;* Britz. Hymen. Südb. Lact. *f. 31;* Bull. Herb. Fr. *pl. 224, f. A, B;* Cooke, Brit. Fungi *pl. 1002;* Gill. Champ. Fr. *pl. 171 (393)*; Lanzi, Funghi Mang. *pl. 51, f. 3;* Roum. Crypt. Ill. Champ. *f. 141;* Sicard, Hist. Nat. Champ. *pl. 44, f. 238.*
EXSICCATI: Burl. Lact. N. Am. *45;* Ellis & Ev. Fungi Columb. *1736;* Herpell, Präp. Hutpilze *48;* P. Karst. Fungi Fenn. *510;* Thüm. Fungi Austr. *913;* Sydow, Myc. Mar. *3320.*

70. **Lactaria seriflua** (DC.) Fries, Epicr. Myc. 345. 1838.

Agaricus serifluus DC. Fl. Fr. 6: 45. 1815.
Agaricus gynaecogalus Otto, Versuch Agar. 75. 1816.

Pileus fleshy, not very thick, plane, then depressed in the center, 5–8 cm. broad; surface brown-fawn, azonate, dry, glabrous; margin inrolled, then elevated, sometimes flexuous: context firm, whitish; latex semitransparent, resembling whey, mild (acrid *fide* DC.), scanty; lamellae yellowish, close, decurrent, 2–3 mm. broad; stipe of the same color as the pileus, nearly equal, dry, glabrous, solid, shorter than the breadth of the pileus, 4–7 mm. thick: spores whitish, subglobular, echinulate, 7–8 μ in diameter.

TYPE LOCALITY: France.
HABITAT: On the ground in moist shaded places in woods.
DISTRIBUTION: New York, and possibly in Pennsylvania: also in Europe.
ILLUSTRATIONS: Berk. Outl. Brit. Fungol. *pl. 13, f. 4;* Cooke, Brit. Fungi *pl. 1012;* Krombh. Abbild. *pl. 40, f. 15, 17, 18;* Lucand, Champ. Fr. *pl. 6;* Bull. N. Y. State Mus. 105: *pl. 95, f. 7–11.*
EXSICCATI: Sydow, Myc. Mar. *611.*

71. **Lactaria isabellina** Burl. Bull. Torrey Club **34**: 88. 1907.

Pileus fleshy, not very thick, convex, then broadly convex, at length infundibuliform, umbonate, 3–4.5 cm. broad; surface red-fulvous in the center, buff toward the margin, all fading to buff when mature, azonate, dry, glabrous, somewhat roughened and wrinkled in the center especially when old; margin arched, glabrous, even or at length faintly striate, sometimes areolate-wrinkled: context rather firm, white, staining yellowish from the latex; latex white, at length (after five minutes or less) becoming sulphur yellow, or at least staining the lamellae and flesh yellow, astringent, then acrid, abundant; lamellae pale-yellowish, or tinted with the same color as the pileus, becoming reddish where bruised, forking near the stipe or midway to the margin of the pileus, close, thin, slightly decurrent, 3 mm. broad; stipe of the same color as the pileus, equal or slightly tapering upwards, tomentose at the base, stuffed, becoming hollow, 4 cm. long, 6 mm. thick: spores white, slightly echinulate, 6–7.5 $\mu \times$ 7–8.5 μ.

TYPE LOCALITY: Newfane, Vermont.
HABITAT: In leaf-mold or sphagnum, moist, mixed or spruce woods.
DISTRIBUTION: Vermont, and Chestnut Bald (1500 meters elevation), Pisgah Forest, North Carolina.
ILLUSTRATION: Mem. Torrey Club **14**: 103. *f. 15.*
EXSICCATI: Burl. Lact. N. Am. *46.*

72. **Lactaria mutabilis** Peck, Ann. Rep. N. Y. State Mus. **43**: 66. 1890.

Pileus fleshy, thin, convex, then nearly plane, 5–10 cm. broad; surface reddish-brown, darker in the center, and zoned with darker rings of confluent spots when moist, azonate when dry, moist but not viscid, glabrous; margin glabrous: context colored like the surface, odorless; latex white, unchanging, mild; lamellae whitish, becoming tinted with yellow in the mature plant, close, adnate, broader than the thickness of the pileus; stipe of the same color as the pileus, equal or tapering upwards, glabrous, stuffed, 2.5–5 cm. long, 6–10 mm. thick: spores subglobose, echinulate, 7.5 μ in diameter.

TYPE LOCALITY: New York.
HABITAT: Low damp places.
DISTRIBUTION: New York.
ILLUSTRATION: Ann. Rep. N. Y. State Mus. 43: *pl. 1, f. 1–4.*

DOUBTFUL AND EXTRALIMITAL SPECIES

Lactaria acris (Bolt.) Fries, Epicr. Myc. 342. 1838. Reported from North Carolina by Schweinitz, but the specimens have been destroyed by insects and the determination cannot be verified.

Lactaria aeruginea (Lam.) Burl. Mem. Torrey Club 14: 46. 1908. Reported from Connecticut by White from Hanmer material, and from Minnesota by Johnson. The Connecticut specimens proved to be *Lactaria turpis* (Weinm.) Fries; the Johnson specimens are not available for examination.

Lactaria albida Peck, Ann. Rep. N. Y. State Mus. 38: 126. 1885. Further field work is necessary before the identity of this form can be positively determined.

Lactaria Calceolus Berk. Lond. Jour. Bot. 6: 315. 1847. This species has not been reported since it was collected in Ohio by Mr. Lea, and the confluent pilei would indicate it to be an abnormal growth, very possibly of *Lactaria hygrophoroides*, described by Berkeley & Curtis in 1859 from Sprague material.

Lactaria flexuosa Fries, Epicr. Myc. 338. 1838. Reported from North Carolina by Schweinitz, and from Vermont by Frost and Burlingham. The Frost and Schweinitz specimens are not preserved, and the third collection, upon subsequent comparison with European plants, proved to be uncertain forms.

Lactaria illachrymans Berk. & Rav.; Berk. & Curt. Ann. Mag. Nat. Hist. II. 12: 425. 1853. This plant was collected in swamps in South Carolina by Ravenel, and has also been reported from North Carolina by Curtis. Since the coloration and zonation seem to indicate that the species is a *Lactaria*, it is probable that under favorable and normal conditions the context would prove to be lactiferous. Until further field study reveals more fully its characteristics I should hesitate to consider it a valid species.

Lactaria mitissima Fries, Epicr. Myc. 345. 1838. Reported from Pennsylvania by Herbst, and from California by Harkness & Moore, but the specimens have not been preserved. It is described in McIlvaine's Am. Fungi 181. 1902.

Lactaria pallida Pers. Tent. Disp. Fung. 64. 1797. Reported from Rhode Island by Bennett, from Connecticut by White, and from Minnesota by Johnson. Only the Connecticut specimens are available for examination and they are pale forms of *Lactaria lactiflua* (L.) Burl.

Lactaria plumbea (Bull.) Fries, Epicr. Myc. 339. 1838. Reported from Wisconsin by Bundy and from New York by Peck. The Bundy specimens are not preserved, and the plant referred to this species by Peck is plainly some other form.

Lactaria pubescens Fries, Epicr. Myc. 335. 1838. Reported from New York by Peck.

Lactaria "saccharium" Johnson, Bull. Minn. Acad. Sci. 1878: 337. 1878. The specimens were collected under poplar trees, among moss and grass. In view of the fact that the type specimens are not available, and that no further collections have been reported, it seems best not to recognize the species at present.

Lactaria sanguinalis (Batsch) Schröt. Krypt. Fl. Schles. 3[1]: 540. 1889. Reported from California by Harkness & Moore and described (*Lactaria controversa* Fries) in McIlvaine's Am. Fungi 164. 1902.

Lactaria subinsulsa Peck, Ann. Rep. N. Y. State Mus. 43: 65. 1890. The type specimens so closely resemble *Lactaria affinis* that it is probably a pale form of that species.

Lactaria vieta Fries, Epicr. Myc. 344. 1838. Reported from Ohio by Morgan, but the specimens are not preserved.

Lactaria zonaria (Lam.) Fries, Epicr. Myc. 336. 1838. Reported from Vermont by Frost, Rhode Island by Bennett, New Jersey by Ellis, Ohio by Morgan, Wisconsin by Bundy, Minnesota by Johnson, and from California by Harkness & Moore. The Ellis specimens, which are the only ones preserved, are not *Lactaria zonaria* (Ellis & Ev. N. Am. Fungi II. *1916*).

11. RUSSULA* Pers. Obs. Myc. 100. 1796.

Russulina Schröt. Krypt.-Fl. Schles. 3[1]: 550. 1889.

Pileus fleshy, continuous with the stipe; surface very variable in color, varying in specimens of the same collection according to light exposure or age, with or without a separable cuticle, dry or viscid, glabrous, areolate, squamulose, velvety, or pruinose; margin even, striate, or sulcate and tuberculate: context brittle, vesiculose, not lactiferous, mild or acrid in taste, sometimes with a distinctly pleasant or disagreeable odor, sometimes changing color where broken or handled; lamellae brittle, rather thin, with acute edges, equal or unequal in length, simple or forking, often becoming darker with age or staining where bruised, sometimes pruinose from the abundant spores; stipe central or nearly so, never fibrous, firm, spongy or stuffed, becoming hollow: spores white or yellow, globose to elliptic, usually echinulate. The plants grow on the ground in the woods or in grassy places in open groves or in the edges of woods, or occasionally on decaying wood.

Type species, *Agaricus emeticus* Schaeff.

Lamellae alternating long and short.
- Pileus without a pellicle. — I. COMPACTAE.
- Pileus with a pellicle more or less separable. — X. HETEROPHYLLAE.

Lamellae dichotomously forking, narrowed at each end. — VIII. BIFIDAE.

Lamellae equal or with a few scattered short ones, simple or some of them forking once.
- Pileus with the pellicle glabrous at first, breaking up into areolae, squamules, or mealy particles, or velvety from the first.
  - Pellicle not separable; surface dry, becoming areolate or areolate-squamulose. — II. LEPIDAE.
  - Pellicle separable part way to the disk.
    - Spores white.
      - Odor not characteristic.
        - Pileus green or brownish-ochraceous. — III. CRUSTOSAE.
        - Pileus white or some shade of yellow or pink; margin even. — VI. INSIGNES.
      - Odor usually foetid.
        - Pileus buff to burnt-umber; margin striate. — VII. PECTINATAE.
    - Spores yellow.
      - Lamellae remaining yellow. — IV. SUBVELUTINAE.
      - Lamellae changing to brownish where bruised, or smoky to umber in drying. — V. ATROPURPUREAE.

Pileus glabrous.
- Spores white.
  - Taste mild.
    - Wounds becoming gray or blackish. — XIX. DECOLORANTES.
    - Wounds not becoming gray or blackish.
      - Pileus yellow. — XVII. FINGIBILES.
      - Pileus red. — XXIV. PURPURINAE.
  - Taste acrid.
    - Lamellae all equal and simple.
      - Pileus yellow, or white tinged with yellow. — XII. OCHROLEUCAE.
      - Pileus red, red and yellow, vinaceous, violet, or white. — XXV. FRAGILES.
    - Lamellae partly short and some forking, chiefly near the stipe.
      - Pellicle separable, viscid.
        - Pileus ochroleucous to snuff-brown or umber; margin usually pectinate. — VII. PECTINATAE.
        - Pileus vinaceous. — XI. VINACEAE.
      - Pellicle scarcely separable or viscid; pileus red. — XIV. SANGUINEAE.
- Spores yellow.
  - Taste mild.
    - Wounds of lamellae becoming gray or blackish. — XIX. DECOLORANTES.
    - Wounds of lamellae not becoming gray or blackish.
      - Lamellae equal, simple.
        - Pileus yellowish. — XVIII. LUTEAE.
        - Pileus some shade of red, or red and yellow intermingled, or gray and umber.
          - Spores pale-yellow. — XXII. INTEGRAE.
          - Spores ochraceous. — XXIII. ALUTACEAE.
      - Lamellae equal or nearly so, forking near the stipe at least.
        - Spores pale-yellow.
          - Pileus white or tinged with yellow or reddish. — IX. BASIFURCATAE.
          - Pileus some shade of green. — XVI. GLAUCAE.

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* BY GERTRUDE SIMMONS BURLINGHAM.

Spores ochraceous; pileus red, purplish-red, rosy, or rosy and yellow intermingled.
Surface viscid; pellicle separable. XX. BETULINAE.
Surface scarcely viscid; pellicle scarcely separable. XXI. OCHROPHYLLAE.
Taste acrid.
Pellicle separable half way to the disk.
Lamellae equal, simple; plants fragile. XV. PALUSTRES.
Lamellae nearly equal, some forking; plants rather firm. XIII. VETERNOSAE.
Pellicle not easily separable; surface scarcely viscid. XIV. SANGUINEAE.

I. COMPACTAE

Pileus white, becoming rusty-ochraceous with age or in drying; wounds turning reddish, but not black.
Lamellae broad, subdistant. 1. *R. compacta.*
Lamellae narrow, close. 2. *R. magnifica.*
Pileus white, becoming blackish or fuliginous with age or in drying.
Wounds changing to reddish, then black.
Lamellae distant. 3. *R. nigricans.*
Lamellae crowded. 4. *R. densifolia.*
Wounds changing to blackish at first.
Surface of pileus dry. 5. *R. sordida.*
Surface of pileus viscid. 6. *R. subsordida.*
Wounds not becoming red or black, but the entire surface becoming fuliginous. 7. *R. subusta.*
Pileus persistently white or whitish. 8. *R. delica.*
Pileus yellowish, yellowish-brown, sordid, or brownish-gray from the first.
Surface persistently smooth.
Lamellae becoming reddish or umber where wounded, or at least with age or in drying.
Lamellae distant. 9. *R. eccentrica.*
Lamellae very crowded. 10. *R. polyphylla.*
Lamellae not changing color where wounded.
Pileus cream-colored or deeper yellow. 11. *R. cremoricolor.*
Pileus grayish-yellow. 12. *R. mustelina.*
Surface becoming rimose-areolate to floccose-scaly. 13. *R. Morgani.*

II. LEPIDAE

Spores pale-yellow.
Pileus sanguineous-rosy, fading, often yellowish on the disk. 14. *R. lepida.*
Pileus rose-purple on the margin, olive-green in the center, fading. 15. *R. xerampelina.*
Spores white; pileus white, sometimes becoming tinged with alutaceous. 16. *R. lactea.*

III. CRUSTOSAE

Spores pure-white.
Pileus green intermingled with yellowish, striate on the margin; taste tardily acrid. 17. *R. crustosa.*
Pileus green, even on margin; taste mild. 18. *R. virescens.*
Spores yellow or tinged with yellow.
Surface of pileus furfuraceous; spores almost white. 19. *R. viridella.*
Surface of pileus pruinose-tomentose or velvety; spores maize-yellow. 20. *R. modesta.*

IV. SUBVELUTINAE

Pileus some shade of red or vinous-purple.
Taste mild.
Surface red; the broken context not becoming sticky where handled. 21. *R. subvelutina.*
Surface vinous-purple, often intermingled with yellowish, very variable; the broken context becoming sticky where handled. 22. *R. Mariae.*
Taste soon acrid. 23. *R. rubriochracea.*
Pileus yellow 24. *R .flavida.*
Pileus violaceous; stipe white. 25. *R. Murrillii.*

V. ATROPURPUREAE.

Wounds becoming sordid-brown to umber; the entire surface brownish in drying. 26. *R. atropurpurea.*
Wounds not becoming brown; the entire surface pale-smoky in drying. 27. *R. serissima.*

VI. INSIGNES

Stipe yellowish, adorned, at least below, with deeper yellow granules or squamules.
Pileus becoming minutely granular except on the disk; taste mild. 28. *R. insignis.*
Pileus becoming squamulose except on the disk; taste acrid. 29. *R. Ballouii.*
Stipe tinged with pink; pileus rose-pink, becoming granular. 30. *R. corallina.*
Stipe white, glabrous.
Pileus white or faintly tinged with pink or yellow in the center, minutely granulose, lamellae decurrent. 31. *R. blanda.*
Pileus pale-lilac, fading to white, minutely floccose or fibrillose. 32. *R. flocculosa.*

VII. PECTINATAE

Margin deeply and widely striate.

Odor resembling that of bitter almonds when fresh, stronger with age or in drying.	
Lamellae mostly simple; pileus thin, up to 8 cm. broad.	33. *R. pectinata.*
Lamellae more or less forked; pileus thick, 8–12 cm. broad.	34. *R. foetens.*
Odor not pronounced.	35. *R. pectinatoides.*
Margin not deeply and widely striate-tuberculate.	
Surface of pileus pulverulent.	
Stipe glabrous.	36. *R. granulata.*
Stipe granulate.	37. *R. pulverulenta.*
Surface of pileus glabrous; hymenophore becoming umber in drying.	38. *R. ventricosipes.*

VIII. BIFIDAE

Taste mild or bitter with age, not acrid; lamellae subdistant.	39. *R. bifida.*
Taste acrid; lamellae crowded.	40. *R. variata.*

IX. BASIFURCATAE

Taste mild, then bitterish.	41. *R. basifurcata.*
Taste acrid.	42. *R. albidula.*

X. HETEROPHYLLAE

Taste mild.	
Pileus greenish or mixed with green.	
Spores pure-white; lamellae narrow.	43. *R. heterophylla.*
Spores creamy-white; lamellae broad.	44. *R. cyanoxantha.*
Pileus yellow.	46. *R. Earlei.*
Taste acrid; spores white; margin even.	45. *R. consobrina.*

XI. VINACEAE

Stipe white.	
Pileus dull-garnet on the margin, pale-yellowish on the disk.	47. *R. vinacea.*
Pileus cinnabar-red on the margin, whitish on the disk.	48. *R. paxilloides.*
Stipe violaceous-purple; pileus Indian-lake to dark-violaceous, paler on the margin.	49. *R. Queletii.*

XII. OCHROLEUCAE

Stipe white, becoming cinereous.	50. *R. ochroleuca.*
Stipe white, unchanging.	
Pileus straw-yellow.	51. *R. Raoultii.*
Pileus white or sometimes tinged with yellow.	52. *R. anomala.*
Stipe pale-ochraceous.	53. *R. simillima.*

XIII. VETERNOSAE

Pileus some shade of red, with yellow often appearing on the disk, or some shade of yellow and orange.	
Spores yellowish-buff; pileus old-blood-red to incarnate, fading, whitish or yellow on the disk.	54. *R. veternosa.*
Spores ochraceous.	
Pileus blood-red or rosy-red, sometimes spotted with white or orange blotches.	55. *R. tenuipes.*
Pileus Corinthian-red, fading, the center tinged with yellow.	56. *R. corinthiirubra.*
Pileus honey-yellow on the disk to coppery-orange on the margin.	57. *R. aurantialutea.*
Pileus Morocco-red, not fading.	58. *R. borealis.*
Pileus dark-violet when dried.	59. *R. atroviolacea.*
Pileus vinous-purple to dark-purple, with chamois color and greenish intermingled.	
Color not fading; stipe bulbous.	60. *R. Robinsoniae.*
Color fading.	61. *R. expallens.*

XIV. SANGUINEAE

Spores creamy-white; lamellae close, soon decurrent.	62. *R. sanguinea.*
Spores pale-yellow; lamellae subdistant, adnate.	63. *R. mexicana.*

XV. PALUSTRES

Pileus slate-violet on the margin, the center vinous-purple surrounded by yellowish; tardily acrid.	64. *R. palustris.*
Pileus lilac-rose to salmon-lilac, the center darker surrounded by gray-green or stone-color; very fragile; promptly acrid.	65. *R. gracilis.*

XVI. GLAUCAE

Stipe white, unchanging.	
Pileus glaucous-green intermingled with rosy-flesh-color or salmon-flesh-color and maize-yellow; margin striate; lamellae becoming pale-yellow.	66. *R. glauca.*
Pileus pale-olivaceous, becoming yellow on the disk, no pink tints present; margin even; lamellae becoming deep-yellow.	67. *R. subolivascens.*
Pileus aerugineous-green, leaden-gray, or paler, sometimes umber on the disk; spores whitish.	68. *R. aeruginea.*

Stipe white, then sordid-yellowish; pileus grass-green. 69. *R. graminicolor.*

XVII. FINGIBILES

Pileus flavous, buff, or fawn-colored. 70. *R. fingibilis.*
Pileus isabelline, with testaceous and ochraceous tints. 71. *R. stricta.*
Pileus white, often tinged with yellow in the center. 72. *R. albida.*

XVIII. LUTEAE

Pileus viscid when wet, without pruinose bloom.
  Pileus luteous; lamellae deep-yellow. 73. *R. lutea.*
  Pileus amber-yellow to golden-yellow; lamellae pale-yellow; taste slightly acrid. 74. *R. flaviceps.*
Pileus dry or at least pruinose, avellaneous-isabelline; lamellae pale-yellow. 75. *R. sulcatipes.*

XIX. DECOLORANTES

Pileus some shade of red.
  Spores yellow.
    Wounds becoming cinereous.
      Pileus varying from light-red to orange. 76. *R. decolorans.*
      Pileus dark-red, often blackish in the center. 77. *R. obscura.*
    Wounds first becoming red, then black. 78. *R. rubescens.*
  Spores white.
    Stipe becoming black when wounded. 79. *R. nigrescentipes.*
    Stipe not becoming black when wounded. 80. *R. subdepallens.*
Pileus yellow. 81. *R. flava.*

XX. BETULINAE

Taste mild; without special odor.
  Pileus reddish-salmon colored on the margin, becoming yellowish on the disk; stipe white. 82. *R. betulina.*
  Pileus rosy or red, fading, yellowish on the disk; stipe yellow to orange at the base. 83. *R. luteobasis.*
  Pileus rosy-incarnate to rosy-orange, with white or pale spots; stipe tinged with rose. 84. *R. roseipes.*
  Pileus vinaceous, dull-Indian-purple, Pompeian-red, or livid-brown, fading; stipe white or washed with pinkish. 85. *R. subalutacea.*
Taste bitter or becoming more or less astringent when mature; odor disagreeable and foetid with age or in drying; pileus blood-red-brown to red-brown. 86. *R. astringens.*

XXI. OCHROPHYLLAE

Pileus dull-red; stipe reddish. 87. *R. ochrophylla.*

XXII. INTEGRAE

Pileus more than 6 cm. broad.
  Odor not characteristic.
    Stipe not tinged with red.
      Pileus varying from dark-dull-red to reddish-brown, fading. 88. *R. integra.*
      Pileus varying from apricot-color on the margin to yellow in the center, becoming fulvous in drying. 90. *R. fulvescens.*
    Stipe tinged with red.
      Pileus Morocco-red, varying to Mars-orange, often apricot-yellow on the disk. 91. *R. rubrotincta.*
      Pileus dark-purple, nearly black on the disk; up to 22 cm. broad. 92. *R. maxima.*
  Odor resembling that of fresh meal; stipe white, rarely rose-colored; pileus varying from red to incarnate or bay-purple. 89. *R. melliolens.*
Pileus less than 6 cm. broad.
  Stipe white.
    Pileus red, sometimes darker on the disk. 93. *R. pusilla.*
    Pileus salmon to reddish-salmon or yellowish-salmon, Morocco-red on the disk. 95. *R. humidicola.*
    Pileus whitish or pale-gray, brown on the disk. 97. *R. Blackfordae.*
  Stipe white or with yellowish stains; pileus slate-violet to livid-umber, darker on the disk. 94. *R. puellaris.*
  Stipe rose-colored; pileus pale-olive-brown, purplish-red or rose-red on the disk. 96. *R. sphagnophila.*

XXIII. ALUTACEAE

Stipe more or less tinged with red; pileus dull-red to purplish-red, fading on the disk. 98. *R. alutacea.*
Stipe white.
  Odor not characteristic.
    Pileus varying from rose-red to purple and lilac; becoming yellow on the disk or over almost the entire surface. 99. *R. chamaeleontina.*
    Pileus vinous-purple with blackish or greenish center; lamellae becoming pale-yellow; cystidia absent. 100. *R. abietina.*
    Pileus reddish-violaceous, without green shades; lamellae becoming ochraceous; cystidia present. 101. *R. Turci.*
  Odor disagreeable with age; pileus purple-brown on the disk, dull-garnet toward the margin. 102. *R. nauseosa.*

XXIV. PURPURINAE

Pileus old-blood-red to reddish-old-rose and rose-pink.	
Stipe deep-red, sometimes white at the base and apex; lamellae usually crenulate on the edges; cystidia numerous.	103. *R. purpurina.*
Stipe white or stained more or less with red; lamellae even on the edges.	104. *R. uncialis.*
Pileus dark-violet, purple, or purplish-red, blackish-livid toward the center.	105. *R. sericeonitens.*
Pileus varying from Vandyke-brown to brownish-drab or burnt-umber.	106. *R. brunneola.*
Pileus whitish or tinged with pink, especially on the margin.	107. *R. albella.*

XXV. FRAGILES

Pileus red, nearly uniformly colored.	
Surface smooth.	
Lamellae adnexed, close; context white next to the cuticle.	108. *R. subfragilis.*
Lamellae free, subdistant; context red next to the cuticle.	109. *R. emetica.*
Surface rugose-tuberculate.	110. *R. rugulosa.*
Pileus containing red or violet, not uniformly colored, nearly black on the disk.	
Stipe white, unchanging.	
Margin of pileus dull-dark-red, even.	112. *R. nigrodisca.*
Margin of pileus incarnate to Indian-lake, greenish toward the disk, striate.	113. *R. fallax.*
Stipe staining sordid-violaceous or dull-red where bruised; margin of pileus violet-colored.	114. *R. parvula.*
Pileus coppery-red intermingled with pale-yellow or ocher.	111. *R. bicolor.*
Pileus white or whitish.	115. *R. crenulata.*

I. **Compactae.** Pileus without a pellicle, dry or viscid, glabrous; margin involute at first, even: context firm and compact as in the Piperatae group of the Lactariae, frequently changing color where wounded or with age, mild or tardily acrid in taste; lamellae unequal, shorter alternating with the longer, seldom forking, in many species becoming darker colored with age or in drying or where wounded; spores white.

1. **Russula compacta** Frost & Peck; Peck, Ann. Rep. N. Y. State Mus. **32**: 32. 1880.

Pileus fleshy, broadly convex, sometimes umbilicate, becoming centrally depressed or infundibuliform, 7.5–15 cm. broad; surface white or whitish, becoming rusty-ochraceous; dry or subviscid after heavy rains, unpolished, glabrous; margin even: context compact, white, mild or slightly and tardily acrid, the odor in drying strong and disagreeable; lamellae white, becoming reddish-brown where wounded and smoky-brown in drying, unequal, occasionally forked, rather close to subdistant, adnate or slightly rounded behind; stipe white, but becoming stained with reddish-brown in handling or where wounded, and sometimes changing color like the pileus, equal or nearly so, solid, 3.5–6.5 cm. long, 1.2–2.5 cm. thick: spores white, globose to subglobose, nearly smooth, 7 μ in diameter.

TYPE LOCALITY: Sandlake, New York.
HABITAT: In pine woods or mixed woods.
DISTRIBUTION: New England, New York, and New Jersey.
ILLUSTRATIONS: Bull. N. Y. State Mus. 116: *pl. 109, f. 1–4.*

2. **Russula magnifica** Peck, Bull. N. Y. State Mus. 67: 24. 1903.

Pileus convex-umbilicate, becoming centrally depressed or infundibuliform, up to 25 cm. broad; surface whitish, becoming pale-rusty-ochraceous, viscid when young or moist, glabrous, but sometimes slightly rimose-squamose in the center; margin even, involute, then upturned: context firm, white or whitish, the odor and taste alkaline, strong and disagreeable, odor persisting in drying; lamellae whitish with a faint pinkish tint, becoming reddish-brown where wounded, and a dark-reddish-brown on drying, unequal, adnate or slightly decurrent, narrow, close; stipe white or whitish, staining brownish-flesh-color, equal or tapering downward, solid, becoming spongy or even hollow, 5–12 cm. long, 1.5–3.5 cm. thick: spores white, broadly elliptic, nearly smooth, slightly roughened at maturity, 6–7 × 8–9 μ.

TYPE LOCALITY: Port Jefferson, Suffolk County, New York.
HABITAT: Among fallen leaves in sandy woods under *Kalmia.*
DISTRIBUTION: Known only from the type locality.
ILLUSTRATIONS: Bull. N. Y. State Mus. 67: *pl. N, f. 5–10.*

3. **Russula nigricans** (Bull.) Fries, Syst. Myc. 1: 60. 1821.

Agaricus nigricans Bull. Herb. Fr. *pl. 212.* 1784.
Agaricus nigrescens Krombh. Abbild. 9: 27. 1845.

Pileus convex and umbilicate, expanding and centrally depressed, 7–13 cm. broad; surface pure-white or stained with smoky-brown, becoming blackish or dark-fuliginous, slightly viscid when wet, glabrous; margin incurved at first, even: context firm, white, slowly changing to reddish where wounded and becoming black, mild to the taste, without odor; lamellae white, becoming blackish with age or in drying, unequal, slightly rounded at the inner ends and adnexed, broad, subdistant; stipe white, becoming smoky-brown with age, solid, 6 cm. long, reaching 3 cm. thick: spores white, broadly elliptic, very finely echinulate, 7 × 8.7 μ.

TYPE LOCALITY: France.
HABITAT: On the ground in coniferous or mixed woods, in rather dry soil.
DISTRIBUTION: Maine to Virginia and North Carolina and west to Wisconsin and Oregon; also in Europe.
ILLUSTRATIONS: Barla, Champ. Nice *pl. 17, f. 1–9* (as *Agaricus adustus* Pers.); Bull. Herb. Fr. *pl. 212, 579, f. 2;* Cooke, Brit. Fungi *pl. 1015;* Gill. Champ. Fr. *pl. 625*: Hussey, Ill. Brit. Myc. **1**: *pl. 73* (as *Agaricus adustus*); Krombh. Abbild. *pl. 70, f. 14, 15;* Quél. Champ. Jura Vosg. *pl. 12, f. 1;* Richon & Roze, Atl. Champ. *pl. 41, f. 19–22;* Ricken, Blätterp. Deutschl. *pl. 15, f. 2;* Lanzi, Funghi Mang. *pl. 51, f. 2, a, b, c;* Sow. Engl. Fungi *pl. 36* (as *Agaricus elephantinus*).

4. **Russula densifolia** (Secr.) Gill. Champ. Fr. 231. 1876.

Agaricus adustus densifolius Secr. Mycogr. Suisse 1: 476. 1833.

Pileus fleshy, firm, convex, then depressed, up to 10 cm. broad; surface white, then fuliginous, gray, or smoky-brown, viscid when wet, glabrous; margin even, inflexed for some time: context white, then reddish where wounded and at length black, mild, without special odor; lamellae white, reddish, then black where wounded, unequal, some forking, adnate to decurrent, close; stipe white, then sordid to gray, at length blackening, firm, slightly pruinose, 4 cm. long, up to 2.5 cm. thick: spores white, globose, 7–8 μ in diameter.

TYPE LOCALITY: France.
HABITAT: On the ground in mixed woods.
DISTRIBUTION: Vermont to the District of Columbia and west to Michigan; also in Europe.
ILLUSTRATIONS: Cooke, Brit. Fungi *pl. 1017;* Gill. Champ. Fr. *pl. 173 (608);* Rep. Mich. Acad. Sci. **11**: *f. 1;* Lucand, Champ. Fr. *pl. 43;* Pat. Tab. Fung. *f. 200, 319.*

5. **Russula sordida** Peck, Bull. Buffalo Soc. Nat. Sci. 1: 57. 1873.

Pileus convex, becoming centrally depressed, 7.5–15 cm. broad; surface sordid-white, becoming smoky-brown with age, dry, glabrous, margin even: context white, changing to blackish-brown or bluish-black where cut or bruised, mild or tardily acrid; lamellae white, changing to blackish-brown or black with age or in drying, unequal, sometimes forked, adnate to slightly decurrent, close; stipe white, becoming smoky-brown with age or where wounded, equal, solid, firm, 2.5–5 cm. long, 1.2–2.5 cm. thick: spores white, globose, very minutely echinulate, appearing nearly smooth, 8 μ in diameter.

TYPE LOCALITY: Worcester, New York.
HABITAT: On the ground under hemlocks.
DISTRIBUTION: Maine, Connecticut, New York, Ohio, and Missouri.
ILLUSTRATIONS: Bull. N. Y. State Mus. 105: *pl. 98, f. 1–5.*

6. **Russula subsordida** Peck, Bull. N. Y. State Mus. 105: 40. 1906.

Pileus firm, convex, becoming nearly plane or centrally depressed, up to 13 cm. broad; surface white, becoming smoky-brown with age, sometimes with an olive-green tint, viscid when young or wet, glabrous; margin even: context grayish-white, slowly changing to smoky-brown when cut or broken, mild or slightly and tardily acrid; lamellae whitish, becoming black or blackish with age or in drying, unequal, adnate, thin, close; stipe white, becoming smoky-brown with age or where wounded, solid, becoming spongy within and sometimes hollow, glabrous, 2.5–3.5 cm. long, 1.2–2.5 cm. thick: spores white, globose, with scattered, blunt papillae on the surface, 8 μ in diameter.

TYPE LOCALITY: Horicon, Wayne County, New York.
HABITAT: In deciduous or mixed woods.
DISTRIBUTION: New England to Alabama and west to Ohio.
ILLUSTRATIONS: Bull. N. Y. State Mus. 105: *pl. 99, f. 1–5.*

7. **Russula subusta** Burlingham.

Agaricus adustus Fries, Syst. Myc. 1: 60. 1821. Not *A. adustus* With. 1792.
Russula adusta Fries, Epicr. Myc. 350. 1838.

Pileus fleshy, convex, depressed, then infundibuliform, 5–16 cm. broad; surface white or whitish, becoming cinereous or fuliginous, dry, glabrous; margin at first inflexed, even, glabrous, then upturned: context firm, thick, white, unchanging, the taste mild; lamellae white, slightly sordid with age, unequal, seldom forking, close, from adnate to decurrent, thin; stipe colored like the pileus, equal, solid, 2.5–5 cm. long, 1–2 cm. thick: spores white, subglobose, echinulate, 7–9 × 8–10 μ.

TYPE LOCALITY: Sweden.
HABITAT: In mixed woods.
DISTRIBUTION: New England to Michigan and south to Alabama; also in Europe.
ILLUSTRATIONS: Atk. Stud. Am. Fungi *pl. 40, f. 6;* Cooke, Brit. Fungi *pl. 1051;* Hard, Mushrooms *f. 145;* Krombh. Abbild. *pl. 70, f. 7–11* (as *Agaricus nigricans*); Ricken, Blätterp. Deutschl. *pl. 15, f. 3.*

8. **Russula delica** Fries, Epicr. Myc. 350. 1838.

Hypophyllum album Paulet & Lév. Ic. Champ. 33. 1855.
Russula deliciosa Schröt. Krypt.-Fl. Schles. 3[1]: 549. 1889.
Russula brevipes Peck, Ann. Rep. N. Y. State Mus. **54**: 178. 1901.

Pileus fleshy, of medium thickness, firm, broadly convex-umbilicate, then spreading, and at length infundibuliform, 8–16 cm. broad; surface white, sometimes with yellowish stains when the pileus has brought soil up with it, easily staining yellowish in drying, dry, glabrous or sometimes under the lens appearing obscurely tomentose from the pulling apart of the fibers in the outer layer; margin even, involute, late in expanding: context firm, white, unchanging where bruised, slowly becoming slightly acrid; lamellae white, the edges often becoming faintly glaucous-green when mature or in the process of drying, becoming yellowish where rubbed, some equal, some forking, narrowed at both ends, decurrent, subdistant to distant, rather narrow; stipe white, sometimes with a glaucous-green ring at the apex, glabrous or sometimes under a lens slightly downy at the apex, 2–5 cm. long, 1–2 cm. thick: spores white, subglobose, tuberculate, 9 × 10 μ.

TYPE LOCALITY: Europe.
HABITAT: In dry woods, especially coniferous woods.
DISTRIBUTION: Maine to Alabama and Mississippi and west to Colorado; also in Europe.
ILLUSTRATIONS: Cooke, Brit. Fungi *pl. 1068;* Gill. Champ. Fr. *pl. 174 (607);* Lucand, Champ. Fr. *pl. 146;* Pat. Tab. Fung. *pl. 514;* Paulet & Lév. Ic. Champ. *pl. 73, f. 1;* Ann. Rep. N. Y. State Mus. **54**: *pl. 71, f. 1–5;* Richon & Roze, Atl. Champ. *pl. 40, f. 1–4;* Ricken, Blätterp. Deutschl. **2**: *pl. 15, f. 1.*
EXSICCATI: Clements, Crypt. Form. Colo. *366;* Roum. Fungi Gall. *5320.*

9. **Russula eccentrica** Peck, Bull. N. Y. State Mus. 150: 61. 1911.

Pileus fleshy but thin, eccentric or deformed, at first centrally depressed, becoming nearly plane, 5–10 cm. broad; surface brownish or brownish-gray, faintly reddish-brown when dry, glabrous, dry; margin even, incurved at first and for some time: context white, with disagreeable odor; lamellae pallid or tinged with pink, becoming reddish where wounded, unequal, adnate or adnexed, thin, subdistant, broad; stipe white, equal, smooth, spongy within, 4–6 cm. long, 1.5–3 cm. thick: spores white, subglobose, smooth or nearly so, 5–7 × 6–8 μ.

TYPE LOCALITY: Near St. Louis, Missouri.
HABITAT: In a grassy ravine in open oak woods.
DISTRIBUTION: Known only from the type locality.

10. **Russula polyphylla** Peck, Bull. Torrey Club **25**: 370. 1898.

Pileus convex, becoming depressed or infundibuliform, 7.5–12.5 cm. broad; surface pale-flesh-colored, sordid-yellowish when dry, subareolate, glabrous; margin even: context firm, mild in taste, odor heavy; lamellae reddish-flesh-colored, umber when dried, unequal, many, very close, adnate to subdecurrent, narrow; stipe concolorous, equal, hollow, 5–7.5 cm. long, 1.5–2.5 cm. thick: spores probably white, somewhat irregular or one-sided in shape, minutely echinulate, 6–7.5 × 7.5 μ.

TYPE LOCALITY: Auburn, Alabama.
HABITAT: On the ground in woods.
DISTRIBUTION: Known only from the type locality.

11. **Russula cremoricolor** Earle, Bull. N. Y. Bot. Gard. **2**: 340. 1902.

Pileus convex, depressed in the center, 6–10 cm. in diameter; surface deep-cream-colored, darker on the disk, smooth; margin entire, incurved: context white, unchanging, peppery, the odor almost none; lamellae pale-cream-colored, unequal, subsinuous, subcrowded, rather plane; stipe white, subequal, irregular, smooth, solid, 4–6 cm. long, 2.5–3.5 cm. thick: spores white, globose, slightly echinulate, 5.5–7 μ in diameter.

TYPE LOCALITY: Stanford University, California.
HABITAT: On the ground in woods.
DISTRIBUTION: Connecticut and California.

12. **Russula mustelina** Fries, Epicr. Myc. 351. 1838.

Pileus convex to expanding, depressed in the center or becoming plane, 5–8 cm. broad; surface brownish or dingy-yellowish, viscid when wet, glabrous; margin even, inflexed: context firm, white, unchanging; lamellae white, unequal, rounded behind and adnexed, broadest in front, venose-connected, close, thin; stipe white, fleshy, solid, smooth, glabrous, 5 cm. long: spores white, globose, echinulate, 5.5–7 μ in diameter.

TYPE LOCALITY: Europe.
HABITAT: On the ground in woods.
DISTRIBUTION: In the vicinity of St. Louis, Missouri; also in Europe.
ILLUSTRATIONS: Cooke, Brit. Fungi *pl. 1018;* Gill. Champ. Fr. *pl. 623.*

13. **Russula Morgani** Sacc. Syll. Fung. **5**: 468. 1887.

Russula incarnata Morgan, Jour. Cinc. Soc. Nat. Hist. **6**: 187. 1883. Not *R. incarnata* Quél. 1882.

Pileus fleshy, firm, convex-umbilicate, then expanding and centrally depressed, 7–10 cm. broad; surface sordid on the margin to brownish on the disk, becoming rimose-areolate or areolate-scaly, moist; margin even: context white, thin, mild in taste; lamellae white, then flesh-colored, short ones alternating with longer, adnate, distant, broad; stipe white, becoming pinkish or reddish-brown where handled, solid, subequal, 5 cm. long, 1.8–2 cm. thick: spores white, nearly smooth, obliquely apiculate, 5.5 × 8 μ.

TYPE LOCALITY: Miami Valley, Ohio.
HABITAT: On the ground under beech trees.
DISTRIBUTION: Ohio and Pennsylvania.

II. **Lepidae.** Pileus without separable pellicle, dry, unpolished, often becoming areolate or areolate-squamulose; margin even: context firm and rigid, mild in taste, without special odor; lamellae with a few short ones intermingled but not at regular intervals, sometimes a few forked, narrow at the inner ends, rounded at the outer: spores pale-yellow to white.

14. **Russula lepida** Fries, Sv. Aetl. Svamp. 50. 1836.

Pileus compact, fleshy, convex to expanded, scarcely depressed, reaching 10 cm. broad; surface beautiful, sanguineous-rosy, fading, often white or yellowish at the disk, darker red on the margin, unpolished, somewhat silky, then often rimose-squamulose, dry; margin even: context firm, cheesy, mild in taste; lamellae white, becoming cream-colored, often red on the edges, a few short ones present, forked, venose-connected, narrowed and rounded toward the stipe, sometimes slightly decurrent by a tooth; stipe white or rosy, even, firm, then spongy, reaching 7 cm. long and 2.5 cm. thick: spores pale-straw-colored, globose, echinulate, 8–9 μ in diameter.

TYPE LOCALITY: Sweden.
HABITAT: In mixed woods or under beeches.
DISTRIBUTION: New York, Alabama, District of Columbia, and Missouri; also in Europe.
ILLUSTRATIONS: Cooke, Brit. Fungi *pl. 1072, 1073;* Cordier, Champ. Fr. *pl. 29, f. 1;* Fries, Sv. Aetl. Svamp. *pl. 59;* Gill. Champ. Fr. *pl. 176 (620)*; Richon & Roze, Atl. Champ. *pl. 44, f. 6–9;* Ricken, Blätterp. Deutschl. *pl. 16, f. 4.*

15. **Russula xerampelina** (Schaeff.) Fries, Epicr. Myc. 356. 1838.

Agaricus xerampelinus Schaeff. Fung. Bavar. **4**: Ind. 49. 1774.

Pileus convex then plane, up to 10 cm. broad; surface more or less rose-purple on the margin, olive-green in the center, becoming paler sometimes, dry, glabrous to pruinose or

rimulose, pellicle not easily separating; margin even, inrolled for some time: context white, slightly yellowish or smoke-colored where exposed in drying, firm, mild in taste, odor not pronounced; lamellae cream-colored, alutaceous in drying, mostly equal, forking near the stipe or sometimes anastomosing midway to the stipe, narrowed at the inner ends, rounded at the outer, not dusted with the spores; stipe white tinged with pink, subequal to ventricose, spongy but firm, under the lens pruinose in the upper portion, somewhat areolate at the base, 5–6 cm. long, 3 cm. thick: spores pale-yellow, globose, echinulate, 10 μ in diameter.

TYPE LOCALITY: Europe.
HABITAT: In coniferous forests or in mixed woods.
DISTRIBUTION: Michigan and Colorado; also in Europe.
ILLUSTRATIONS: Cooke, Brit. Fungi *pl. 1053, 1074;* Gill. Champ. Fr. *pl. 178* (*640*); Ricken, Blätterp. Deutschl. *pl. 17, f. 3;* Schaeff. Fung. Bavar. *pl. 214, 215.*
EXSICCATI: Roum. Fungi Sel. *5322.*

16. **Russula lactea** (Pers.) Fries, Epicr. Myc. 355. 1838.

Agaricus lacteus Pers. Syn. Fung. 439. 1801.
Hypophyllum integrum Paulet & Lév. Ic. Champ. 34. 1855.

Pileus fleshy, compact, campanulate, then convex and at length spreading and depressed in the center, often eccentric, up to 10 cm. broad; surface white, then tinged with alutaceous, dry, becoming rimulose-areolate to squamulose; margin even, thin, obtuse: context mild in taste; lamellae white, a few short ones present, forked, distant, thick, rigid, rather broad; stipe white, solid, firm, spongy within, 4–5 cm. long, up to 4 cm. thick: spores white, subglobose, echinulate, 8–9 $\times$ 9–10 μ.

TYPE LOCALITY: Europe.
HABITAT: On the ground in mixed woods.
DISTRIBUTION: Mississippi; also in Europe.
ILLUSTRATIONS: Barla, Champ. Nice *pl. 15, f. 11–13;* Cooke, Brit. Fungi *pl. 1070;* Gill. Champ. Fr. *pl. 619* (var. *incarnata*); Paulet & Lév. Ic. Champ. *pl. 74, f. 2;* Richon & Roze, Atl. Champ. *pl. 40, f. 9–11.*

III. **Crustosae.** Pileus without separable pellicle; surface green, dry or viscid when wet, breaking up into scales like those on an *Amanita*, or into smaller mealy-like granules, or velvety-tomentose from the first; margin even, but sometimes obscurely striate in age: context white, unchanging, moderately firm, mild or tardily acrid, without special odor; lamellae with some short ones intermingled and some forking, narrow at the inner ends and rounded at the outer: spores white or pale-yellow.

17. **Russula crustosa** Peck, Ann. Rep. N. Y. State Mus. **39**: 41. 1887.

Pileus convex, becoming nearly plane or centrally depressed, 5–12 cm. broad; surface variable in color, stramineous, pale-ochraceous, brownish-ochraceous, greenish or greenish-yellow, rarely brownish-purple, viscid when wet, with small, appressed, areolate scales, except on the smooth disk; margin striate when mature: context white, mild or slightly and tardily acrid; lamellae white, some short, some forked, narrowed toward the stipe, moderately close; stipe white, equal, stuffed or hollow, 3–6 cm. long, 1.2–2.5 cm. thick: spores white, subglobose, 8–10 μ in diameter.

TYPE LOCALITY: New York.
HABITAT: In woods and open places in woods.
DISTRIBUTION: From Connecticut west to Michigan and Ohio and south to Alabama and Mississippi.
ILLUSTRATIONS: Bull. N. Y. State Mus. 67: *pl. 84, f. 1–7.*

18. **Russula virescens** (Schaeff.) Fries, Epicr. Myc. 355. 1838.

Agaricus virescens Schaeff. Fung. Bavar. **4**: Ind. 40. 1774.

Pileus fleshy, globose, becoming convex, then nearly plane and often centrally depressed, 5–12 cm. broad; surface green or grayish-green, dry, with small, flocculose patches or warts resembling those of *Amanita;* margin even, rarely slightly striate in old specimens: context white, mild in taste; lamellae white, a few short ones present, some forking, narrow toward the stipe and nearly or quite free, rather close; stipe white, firm, nearly equal, 2.5–5 cm. long, 1.2–2 cm. thick: spores white, subglobose, echinulate, 7 $\times$ 8 μ.

TYPE LOCALITY: Europe.
HABITAT: Oak, maple, or mixed woods.
DISTRIBUTION: Maine to Virginia and west to Michigan and Ohio; also in Europe.
ILLUSTRATIONS: Atk. Stud. Am. Fungi *pl. 36, f. 1;* Barla, Champ. Nice, *pl. 16, f. 10–12;* Bres. Funghi Mang. *pl. 69;* Cooke, Brit. Fungi *pl. 1039;* Cordier, Champ. Fr. *pl. 31;* Gill. Champ. Fr. *pl. 175;* Ricken, Blätterp. Deutschl. *pl. 16, f. 3;* Ann. Rep. N. Y. State Mus. **48**: *pl. 31;* Hussey, Ill. Brit. Myc. *pl. 11;* Vitt. Descr. Funghi Mang. *pl. 31.*
EXSICCATI: Cavara, Fungi Longob. *104.*

19. **Russula viridella** Peck, Bull. N. Y. State Mus. 105: 41. 1906.

Pileus subglobose or very convex, becoming nearly plane or centrally depressed, 5–10 cm. broad; surface pale-grayish-green, paler or subochraceous in the center, dry, soon minutely squamulose or furfuraceous, except in the center; margin even: context white, acrid; lamellae white, a few short ones present, some forked, thin, narrow, close; stipe white, equal or nearly so, even, solid or spongy within, 5–7.5 cm. long, 1–1.6 cm. thick: spores white, tinged with yellow, globose to subglobose, 8 μ or less in diameter; cystidia subfusiform, 80 $\times$ 16 μ.

TYPE LOCALITY: Horicon, Wayne County, New York.
HABITAT: Under hemlock trees.
DISTRIBUTION: Known only from the type locality.
ILLUSTRATIONS: Bull. N. Y. State Mus. 105: *pl. 100, f. 1–7.*

20. **Russula modesta** Peck, Bull. N. Y. State Mus. 116: 78. 1907.

Pileus firm but thin and flexible, broadly convex, becoming nearly plane or depressed in the center, 2.5–6.5 cm. broad; surface greenish-gray, dry, minutely pruinose-tomentose, noticeably so under a lens; margin even or obscurely striate: context white, taste mild; lamellae white, becoming cream-colored or darker in drying, a few short, many forked behind, venose-connected, narrowed toward the stipe, adnate or slightly decurrent, close; stipe white, nearly equal, solid, glabrous, 2.5 to nearly 4 cm. long, up to 1.2 cm. thick: spores maize-yellow, subglobose, nearly smooth, 5–6 $\times$ 7 μ.

TYPE LOCALITY: Albany County, New York.
HABITAT: Woods.
DISTRIBUTION: New York and Vermont.

IV. **Subvelutinae.** Pileus with the pellicle separable on the margin, usually dry, but sometimes slightly viscid when wet, velvety-pruinose from the first, some shade of red, violet, or yellow; margin even; context white, unchanging, mild or tardily acrid; lamellae equal, some forking next to the stipe, narrow at the inner ends, rounded at the outer: spores yellow.

21. **Russula subvelutina** Peck, Bull. Torrey Club **33**: 215. 1906.

Pileus fleshy, firm, convex or slightly depressed in the center, 5–11 cm. broad; surface dark-red or crimson, dull-carmine-lake to Indian-lake, sometimes darker in the center, dry, minutely pubescent or velvety, not noticeably so in the dried state except under a lens, cuticle adnate; margin even: context white, the taste sweet; lamellae white, becoming cream-yellow, the edges in the dried state grayish, sometimes forked next to the stipe, venose-connected, moderately close, adnate; stipe white, tinged more or less with red, equal or tapering downward, unpolished, stuffed or spongy within, 5–10 cm. long, 1–1.5 cm. thick: spores pale-yellow, subglobose, nearly smooth, 7–10 μ in diameter.

TYPE LOCALITY: St. Louis, Missouri.
HABITAT: Woods.
DISTRIBUTION: Vermont to North Carolina, and west to Missouri.

22. **Russula Mariae** Peck, Ann. Rep. N. Y. State Mus. **24**: 74. 1872.

Pileus convex, becoming plane or depressed in the center, up to 7 cm. broad; surface vinous-purple to slate-violet when growing in the open, cream-colored to maize-yellow tinged more or less with slate-violet when in the shade or covered with leaves, dry, pruinose or minutely granular or tomentose; margin even, sometimes becoming slightly striate-tuberculate when mature, incurved to the stipe when young, then spreading: context white, becoming sticky where cut or handled, the taste mild, odor where broken or bruised faint but decided; lamellae

white, then cream-colored, darker in drying, equal, some forking near the stipe, interveined, narrow at the inner ends, broad at the outer, rather close; stipe colored like the pileus or slightly paler, usually white at each end, sometimes entirely white, rarely greenish in drying, equal or tapering downward, solid to spongy, 2.5–5.5 cm. long, 0.6–2 cm. thick: spores pale-yellow, globose, echinulate, apiculate, 7–8.75 μ in diameter.

TYPE LOCALITY: New York.
HABITAT: In open deciduous woods or groves or by roadsides through woods.
DISTRIBUTION: Vermont to Alabama and Louisiana and west to Michigan.
ILLUSTRATIONS: Bull. N. Y. State Mus. 75: *pl. 85, f. 1–8;* Mycologia 4: *pl. 76, f. 2, 8.*

23. **Russula rubriochracea** Murrill, Mycologia 4: 293. 1912.

Pileus convex to plane or slightly depressed, reaching 6 cm. broad; surface red or purple with a bloom, darker in the center, dry, smooth; margin entire: context white, thin, the taste at first nutty, becoming distinctly but not violently acrid, the odor not characteristic; lamellae exactly ochraceous even in a very young stage, adnexed, plane, subdistant; stipe pale-rose-colored or lilac, tapering below, smooth, dry, glabrous, 4.5 cm. long, 1.3 cm. thick: spores ochraceous in mass, subglobose, roughly tuberculate, 8–11 μ in diameter.

TYPE LOCALITY: Bronx Park, New York City.
HABITAT: On the ground in oak woods.
DISTRIBUTION: Known only from the type locality.
ILLUSTRATION: Mycologia 4: *pl. 76, f. 9.*

24. **Russula flavida** Frost & Peck; Peck, Ann. Rep. N. Y. State Mus. 32: 32. 1880.

Pileus fleshy, firm, convex, becoming nearly plane or centrally depressed, 3–7.5 cm. broad; surface chrome-yellow, sometimes cadmium-yellow or orange in the center, velvety-pruinose or mealy, especially on the margin, dry; margin even, sometimes fading: context white, taste mild; lamellae pure-white when fresh but dingy or clay-colored when old or dried, equal, entire for the most part, rather close and thick; stipe colored like the pileus or a little paler, sometimes brighter at the base, equal or slightly tapering upward, solid, becoming spongy within and sometimes hollow, 3.5–7.5 cm. long, 0.8–1.6 cm. thick: spores yellowish, subglobose, echinulate, 6–7 $\times$ 7–8 μ.

TYPE LOCALITY: Sandlake, New York.
HABITAT: In grassy places among bushes or in woods.
DISTRIBUTION: Vermont and Connecticut south to Alabama and in Ohio.
ILLUSTRATIONS: Bull. N. Y. State Mus. 105: *pl. 97, f. 1–6.*

25. **Russula Murrillii** Burl. Mycologia 5: 310. 1913.

Pileus convex, becoming plane then depressed, up to 5 cm. broad; surface violaceous or darker in the center or entirely darker, pruinose, becoming floccose-pruinose, evidently viscid when wet but soon dry; margin even: context white, thin, taste not noted; lamellae ochroleucous when fresh, becoming deeper yellow, equal, rarely forking next to the stipe, venose-connected, rounded at the outer ends, narrowly adnate at the inner, subdistant, rather broad; stipe chalk-white, unchanging in drying, nearly equal, firm, stuffed, then tending to become hollow, glabrous; spores pale-yellow, echinulate, some globose but many elliptic, 7 $\times$ 10 μ.

TYPE LOCALITY: Corvallis, Oregon.
HABITAT: In fir forests with scattered specimens of oak, birch, willow, and maple.
DISTRIBUTION: Known only from the type locality.

V. **Atropurpureae.** Pileus broad, with the pellicle separable on the margin, slightly viscid to plainly viscid when moist, variable in color, vinous-purple to brownish-purple intermingled with olive-green or lighter green, pruinose-velvety to glabrous; margin even, sometimes obscurely striate when old: context white, unchanging where wounded or becoming sordid-brown, and in any case yellowish to smoke-colored in drying, rather firm, mild or slightly and tardily acrid, with a disagreeable odor in drying; lamellae whitish or cream-colored, deeper colored with age, brown or smoke-colored in drying, sometimes changing to brownish where injured, mostly equal or with a few scattered short ones, some forking, but sometimes simple: spores yellow.

26. **Russula atropurpurea** Peck, Ann. Rep. N. Y. State Mus. **41**: 75. 1888.

Russula squalida Peck, Bull. N. Y. State Mus. 116: 80. 1907.

Pileus convex, becoming plane or centrally depressed, up to 14 cm. broad; surface varying in color from vinous-purple to old-olive-green and sordid-brown, pruinose-velvety to glabrous, viscid when wet, with the cuticle separable on the margin; margin even, sometimes slightly striate when old: context white, changing to sordid-brown or fuliginous where bruised, mild in taste, with a disagreeable odor in drying; lamellae white, becoming pale-yellow, then brownish where injured or in drying, usually dusted with the spores, equal or with a few scattered short ones, some forking near the stipe, acute at the inner ends, rounded at the outer; stipe white or pinkish, glabrous, staining brownish where bruised, spongy-firm, 6 cm. long, 2–3 cm. thick: spores maize-yellow, echinulate, subglobose, 7 × 7–8.7 μ.

TYPE LOCALITY: Saratoga County, New York.
HABITAT: In coniferous or mixed woods.
DISTRIBUTION: New England south to North Carolina and west to Michigan and Colorado.

27. **Russula serissima** Peck, Bull. N. Y. State Mus. 139: 44. 1910.

Pileus fleshy, thin, fragile, convex, becoming nearly plane or centrally depressed, 5–7 cm. broad; surface variable in color, pale-olive-green or brownish-purple, sometimes spotted in the center, viscid when moist, with the cuticle separable on the margin, pruinose to glabrous; margin even or obscurely striate when old: context white or whitish, not changing to brown where wounded, but becoming smoke-colored in drying, mild or slightly and tardily acrid, with a strong, unpleasant odor in drying, the odor persisting for some time; lamellae cream-colored or buff, becoming smoky or dingy in drying, equal, seldom forking, narrow next to the stipe, rounded at the outer ends, adnexed, sometimes seceding, usually pruinose, thin, close, 4–8 mm. broad; stipe white, assuming a somewhat smoky hue in drying, equal or tapering upward, 4–7 cm. long, 0.8–2 cm. thick: spores buff-yellow, subglobose, echinulate, 7.6 × 9.5 μ.

TYPE LOCALITY: Ellis, Massachusetts.
HABITAT: Under fallen leaves in woods.
DISTRIBUTION: Massachusetts.

VI. **Insignes.** Pileus with the pellicle separable to the disk, slightly viscid when wet but appearing dry for the most part, minutely granular or squamulose or flocculose, white or some shade of yellow or pink; margin even; context white, not changing color, mild or acrid, without special odor; lamellae equal, some forking, adnate or adnexed to slightly decurrent: spores white.

28. **Russula insignis** Burlingham, sp. nov.

Pileus convex to nearly plane or depressed, up to 8.2 cm. broad; surface cream-white in the outer portion, darker dull-yellow at the center, pruinose to glabrous on the disk, minutely granular from the disk to the extreme margin, with the pellicle separable only on the margin, if viscid, soon dry and unpolished; margin striatulate when mature, slow in expanding: context firm, white, mild and agreeable in taste; lamellae white, mostly equal, occasionally forked, rounded at the outer ends, adnexed, close, thin, broad; stipe scurfy or squamulose with yellow nearly to the apex, nearly white at the apex, entirely dark-dull-yellow at the base, attenuate upward, loosely stuffed, dry, up to 7.5 cm. long, 2.5 cm. thick: spores white, elliptic, echinulate, 6.5 × 8.5 μ.

TYPE collected in swampy mixed woods at Stow, Massachusetts, August 17, 1913, *Simon Davis 1–1913* (herb. Burlingham).
DISTRIBUTION: Stow and Milton, Massachusetts.

29. **Russula Ballouii** Peck, Bull. N. Y. State Mus. 167: 31. 1913.

Pileus thin, broadly convex, nearly plane or slightly depressed in the center, 2–5 cm. broad; surface yellow when moist, grayish-yellow when the moisture has escaped, the pale-brick-red cuticle cracking into minute scales everywhere except in the center, not viscid but

moist enough for leaves to adhere; margin at first inrolled: context white, peppery; lamellae white, becoming pale-yellow in drying, equal, a few forked half way from margin to stipe, adnate or subdecurrent, thin, narrow, close, becoming pruinose; stipe colored and adorned like the pileus, equal or slightly tapering downward, firm, 2–5 cm. long, 8–10 mm. thick: spores white, subglobose, echinulate, 8–10 μ in diameter.

TYPE LOCALITY: Bulls Head, Richmond County, New York.
HABITAT: On the ground in wet soil, in mixed young woods; also in wet soil around decayed logs and stumps.
DISTRIBUTION: In the type locality and vicinity.
ILLUSTRATIONS: Bull. N. Y. State Mus. 167: *pl. 9, f. 1–4.*

30. **Russula corallina** Burlingham, sp. nov.

Pileus convex, then depressed in the center with the margin arched, 4.5 cm. broad; surface pale-rosy-pink, unevenly colored, viscid when moist, soon dry and densely pruinose, the cuticle breaking up into granules, exposing the cream-white context beneath; margin even: context mild at first, becoming acrid; lamellae white, equal, rounded at the outer ends, narrow but slightly adnate behind and forking, close; stipe white faintly tinged with pink, tapering downward, becoming hollow: spores white, elliptic, slightly echinulate, 7 × 8.7 μ.

Type collected on sandy loam in mixed woods at Newfane, Vermont, August 9, 1910, *Gertrude S. Burlingham 62–1910* (herb. Burlingham).
DISTRIBUTION: Known only from the type locality.

31. **Russula blanda** Burlingham, sp. nov.

Pileus broadly convex, soon umbilicate, then expanding to plane and slightly depressed in the center, 3–4 cm. broad; surface very white except in the center, where there is a faint tinge of pink or yellow more noticeable with age, cuticle separable, slightly viscid when wet, minutely squamulose or granulose, especially on the disk; margin even: context pure-white, unchanging, mild in taste, without special odor; lamellae white, equal, some forking next to the stipe, slightly decurrent, rather close; stipe white, pruinose at the apex, spongy-firm, enlarged more or less next to the lamellae, 2–2.5 cm. long, 0.5–1 cm. thick: spores white, nearly globose, nearly smooth, 6.5–8.2 μ in diameter.

Type collected under chestnut, ironwood, and dogwood trees by a road through the woods near Second Lake, at Cold Spring Harbor, Long Island, New York, July 23, 1912, *Gertrude S. Burlingham 24–1912* (herb. Burlingham; extype herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

32. **Russula flocculosa** Burlingham, sp. nov.

Pileus convex, becoming plane and somewhat depressed, 9–11 cm. broad; surface light-grayish-vinaceous or lilac, fading to white, appearing whitish on the margin when dried and light-isabelline to umber in the center, or entirely pallid with a faint-lilac tint, minutely floccose, with the pellicle separable for some distance toward the center; margin even: context white, moderately thick and firm, mild in taste; lamellae white, not changing, equal, a few forked, venose-connected, narrowed toward the stipe, subdistant, rather broad; stipe white, equal, terete, stuffed, glabrous, 6–9 cm. long, 2–3.5 cm. thick: spores white, subglobose, minutely echinulate, appearing nearly smooth, 5–7 μ in diameter.

Type collected on the ground in woods at West Elkton, Ohio, September 8, 1914, *L. O. Overholts 2224* (herb. Burlingham).
DISTRIBUTION: Ohio.

VII. **Pectinatae.** Pileus firm to thin, with pellicle more or less separable; surface ochroleucous to snuff-brown and umber, viscid when wet, sometimes with mealy scales or pulverulence; margin usually deeply striate and tuberculate: context whitish, often with a pungent or disagreeable odor and disagreeable or acrid taste; lamellae mostly equal, some forking, narrowed toward the stipe: spores white or cream-white in mass.

33. **Russula pectinata** Fries, Epicr. Myc. 358. 1838.

Pileus fleshy, broadly convex, becoming plane, then centrally depressed, up to 8 cm. broad; surface raw-umber to snuff-brown, paler on the margin, at times somewhat fuscous

in the center, slimy-viscid when wet, the pellicle not easily separable, glabrous; margin pectinate-sulcate half way to the disk, thin: context next to the pellicle tinged like the surface, unpleasant and slowly but decidedly acrid in taste, with a slight odor like *R. foetens* when fresh, the odor becoming more pungent in drying and persisting in dried specimens for some months; lamellae white, equal, mostly simple, venose-connected, narrowed toward the stipe, close; stipe white, rarely with a touch of umber at the base; often tapering downward, firm, becoming spongy within, 3.5–6 cm. long, 1–1.5 cm. thick: spores white, broadly elliptic, echinulate, 6–7 × 7–8 μ.

TYPE LOCALITY: Europe.
HABITAT: In grassy places in deciduous woods of oak, chestnut, beech, and maple.
DISTRIBUTION: New York west to Ohio, Missouri, and Washington and south to Mississippi; also in Europe.
ILLUSTRATIONS: Britz. Hymen. Sudb. Russ. *f. 50, 138;* Cooke, Brit. Fungi *pl. 1101;* Gill. Champ. Fr. *pl. 630;* Lanzi, Funghi Mang. *pl. 47, f. 3, a, b, c;* Noulet & Dassier, Traité Champ. *pl. 15, f. A, B;* Pat. Tab. Fung. *pl. 620;* Richon & Roze, Atl. Champ. *pl. 41, f. 9–12.*
EXSICCATI: Sydow, Myc. Mar. *3312.*

34. **Russula foetens** (Pers.) Fries, Epicr. Myc. 359. 1838.

Agaricus foetens Pers. Obs. Myc. 102. 1796.
Russula foetentula Peck, Bull. N. Y. State Mus. 116: 85. 1907.

Pileus fleshy, firm, then fragile, subglobose, becoming plane to slightly depressed in the center, 7.5–12.5 cm. broad; surface honey-colored or dull-buff to reddish-brown, viscid when moist, pellicle separable part way to the disk, glabrous; margin widely striate-tuberculate or sulcate, thin and incurved at first: context whitish, except next to the cuticle, where it is yellowish, acrid to slowly acrid and unpleasant, the odor at first like bitter almonds, then fetid; lamellae white, becoming yellowish with age, reddish-brown where bruised, some short ones present, many forking next to the stipe and a few part way to the margin, interspaces venose, exuding drops of water when young, rather close, broad, narrowed toward the stipe, adnexed; stipe whitish, becoming yellowish or umber where handled or with age, stuffed to hollow, equal, 4–8 cm. long, 1.2–2.5 cm. thick: spores whitish to cream-colored, subglobose, slightly echinulate, 7–8 × 9–10 μ.

TYPE LOCALITY: Europe.
HABITAT: In mixed woods and bushy places.
DISTRIBUTION: Maine to Alabama and west to Ohio and Michigan; also in Europe.
ILLUSTRATIONS: Bull. Herb. Fr. *pl. 292;* Cooke, Brit. Fungi *pl. 1046;* Fries, Sv. Aetl. Svamp. *pl. 40;* Gill. Champ. Fr. *pl. 179 (612);* Hard, Mushrooms *f. 147;* Krombh. Abbild. *pl. 70, f. 1–6;* Mycologia 4: *pl. 76, f. 7;* Ricken, Blätterp. Deutschl. *pl. 19, f. 4.*
EXSICCATI: Herpell, Präp. Hutpilze *50.*

35. **Russula pectinatoides** Peck, Bull. N. Y. State Mus. 116: 43. 1907.

Pileus thin, broadly convex, becoming nearly plane or centrally depressed, 2.5–7.5 cm. broad; surface chamois-colored to dingy-straw-colored or yellowish-brown to cinnamon-brown, darker in the center, viscid when moist, glabrous; margin widely tuberculate-striate: context grayish-white under the separable pellicle, otherwise white, mild or slightly and tardily acrid; lamellae white, becoming creamy, fulvous where bruised, mostly equal, some forking next to the stipe, adnate, thin; stipe white, discoloring yellowish-brown where bruised or in drying, glabrous, spongy within, 2.5–5 cm. long, 5–10 mm. thick: spores whitish, subglobose, 6–8 μ in diameter.

TYPE LOCALITY: New York.
HABITAT: Grassy ground in groves and woods.
DISTRIBUTION: Vermont to Michigan and south to Virginia and North Carolina.
ILLUSTRATIONS: Bull. N. Y. State Mus. 116: *pl. 105, f. 6–10.*

36. **Russula granulata** Peck, Ann. Rep. N. Y. State Mus. 53: 843. 1900.

Pileus convex, becoming nearly plane or depressed in the center, 5–7.6 cm. broad; surface buff or chamois-colored to burnt-umber in the center, viscid when moist, sometimes obscurely squamulose, again prominently granular-squamulose, and sometimes rimose-squamose; mar-

gin striate-tuberculate: context white or whitish, acrid or slowly acrid and unpleasant, the odor none when fresh; lamellae white, staining umber where bruised, mostly equal, many forking next to the stipe, narrow at the inner ends, adnate, close; stipe equal or abruptly contracted at the apex, sometimes tapering downward, white stained with yellowish-brown, especially at the base, becoming more discolored in drying, firm, spongy, 2–4 cm. long, 1.3–1.7 cm. thick: spores white, creamy-white on white paper, globose, nearly smooth, 7 μ in diameter.

TYPE LOCALITY: Ulster County, New York.
HABITAT: In woods, especially under spruce trees.
DISTRIBUTION: Vermont west to the Pacific coast.
ILLUSTRATIONS: Ann. Rep. N. Y. State Mus. **53**: *pl. C, f. 1–5.*

37. **Russula pulverulenta** Peck, Bull. Torrey Club **29**: 70. 1902.

Pileus rather thin, convex, soon centrally depressed or subumbilicate, 3–8 cm. broad; surface ochroleucous, then grayish-brown, pulverulent with pale-yellow, mealy scales or patches, viscid when wet, with separable pellicle; margin even at first, striate when mature: context white, the taste mild and somewhat disagreeable, the odor somewhat fetid; lamellae white, equal, not infrequently forking next to the stipe, venose-connected, adnate, close; stipe white at the apex, elsewhere thickly beset with yellow dots or granules, subequal, spongy-stuffed, becoming hollow, 3–9 cm. long, 0.8–2 cm. thick: spores white, globose, about 8 μ in diameter.

TYPE LOCALITY: Michigan.
HABITAT: In mixed woods.
DISTRIBUTION: Vermont and Michigan.

38. **Russula ventricosipes** Peck, Bull. Torrey Club **29**: 70. 1902.

Pileus thin, broadly convex, nearly plane or slightly depressed in the center, 5–7 cm. broad; surface varying in color from tawny-yellow to pale-alutaceous, becoming umber in drying, glabrous, viscid when wet; margin inrolled and even, thin, striate: context white; lamellae white or whitish, becoming umber in drying, equal, forking next to the stipe, slightly sinuate, adnate, narrow, close, thin; stipe whitish above, reddish toward the pointed base, ventricose, firm, solid or subspongy within, nearly glabrous, 5–7 cm. long, 2.5 cm. thick: spores broadly elliptic, nearly smooth, 6–8 μ in diameter.

TYPE LOCALITY: South Yarmouth, Massachusetts.
HABITAT: Sandy soil under or near pine trees.
DISTRIBUTION: Known only from the type locality.

VIII. **Bifidae.** Pileus rather firm, broad; pellicle separable on the margin only; surface green or reddish-purple variegated more or less with green, viscid when wet, glabrous or pruinose; margin even, thin: context white, unchanging, mild or acrid, without special odor; lamellae white, dichotomously forked, some short ones present, narrowed toward each end: spores white.

39. **Russula bifida** (Bull.) Schröt. Krypt.-Fl. Schles. **3**[1]: 549. 1889.

Agaricus bifidus Bull. Herb. Fr. *pl. 26.* 1780.
Amanita furcata Lam. Encyc. **1**: 106. 1783.
Agaricus furcatus J. F. Gmel. Syst. Nat. **2**: 1410. 1791.
Russula furcata Fries, Epicr. Myc. 352. 1838.

Pileus convex, becoming plane or concave, 5–10 cm. broad; surface green, not uniform in color, tinged with fulvous, yellow, umber, or black in the center, the pellicle separable on the margin only, smooth, frosted with a slight silkiness or appearing as though moldy or mealy; margin even, acute, inflexed: context white, mild or insipid and nauseous, sometimes bitter with age; lamellae white, equal, forking twice and sometimes three times, adnate to decurrent, subdistant, rather broad; stipe white, solid, even, spongy or hollow with age, tapering downward, 3–7 cm. long, 1–1.6 cm. thick: spores white, globose, echinulate, 7–8 μ in diameter.

TYPE LOCALITY: France.
HABITAT: In woods.
DISTRIBUTION: New York; also in Europe.
ILLUSTRATIONS: Barla, Champ. Nice *pl. 16, f. 1–9;* Bull. Herb. Fr. *pl. 26;* Cooke, Brit. Fungi *pl. 1036;* Richon & Roze, Atl. Champ. *pl. 41, f. 1–3.*

40. **Russula variata** Banning & Peck; Peck, Bull. N. Y. State Mus. 105: 41. 1906.

Pileus fleshy, firm, convex, becoming centrally depressed or subinfundibuliform, up to 12 cm. broad; surface reddish-purple or brownish-purple, often variegated with green or wholly pea-green, viscid when wet, cuticle separable on the margin only, sometimes cracking and areolate toward the margin, glabrous; margin even, thin: context white, acrid or tardily acrid; lamellae white, some of them short, forking from one to three times, tapering at each end, thin, close, narrow; stipe white, equal or nearly so, solid or at length with one or more cavities, 3.5–7.5 cm. long, 1–2 cm. thick: spores white, subglobose, 7–10 μ in diameter.

TYPE LOCALITY: Baltimore, Maryland.
HABITAT: In either coniferous or deciduous woods.
DISTRIBUTION: Eastern United States from Vermont to Virginia.
ILLUSTRATIONS: Bull. N. Y. State Mus. 105: *pl. 101, f. 1–5*.

IX. **Basifurcatae.** Pileus firm, broad; pellicle separable on the margin only; surface white or whitish tinged with yellow or reddish-yellow, viscid when wet, glabrous; margin even: context white, unchanging, mild to bitterish or acrid; lamellae white at first, mostly equal, many forked at the base, narrowed toward the stipe: spores pale-yellow.

41. **Russula basifurcata** Peck, Ann. Rep. N. Y. State Mus. **38**: 90. 1885.

Pileus fleshy, firm, convex, umbilicate, becoming subinfundibuliform, 5–7.5 cm. broad, surface dingy-white, often tinged with yellow or reddish-yellow, slightly viscid when moist; the pellicle separable on the margin only, glabrous; margin even: context white, mild then bitterish; lamellae white, becoming yellowish, a few short ones intermingled, many forked at or near the base, narrowed toward the stipe, adnate or slightly emarginate, close; stipe white, firm, solid, becoming spongy within, 1.6–2.5 cm. long, 1–1.3 cm. thick: spores pale-yellow, elliptic, 7–8 μ long.

TYPE LOCALITY: New York.
HABITAT: Dry ground in woods and bushy places.
DISTRIBUTION: Maine and Vermont.

42. **Russula albidula** Peck, Bull. Torrey Club **25**: 370. 1898.

Pileus fleshy, convex to subplane, at length subinfundibuliform, 2.5–10 cm. broad; surface white, becoming yellowish in drying, viscid with separable pellicle, glabrous; margin even: context white, firm, acrid; lamellae white, equal, sometimes forking next to the stipe, rather close, adnate or slightly decurrent; stipe white, equal, smooth, glabrous, solid, 2.5–6 cm. long, 8–20 mm. thick: spores pale-yellow, subglobose, marked with broken reticulations, 6–7.5 $\times$ 7.5–10 μ.

TYPE LOCALITY: Auburn, Alabama.
HABITAT: In pine, spruce, or oak woods.
DISTRIBUTION: Vermont to Alabama and west to Michigan.

X. **Heterophyllae.** Pileus rather firm, broad; pellicle separable on the margin only; surface viscid when wet, glabrous; margin even or slightly striate: context white, unchanging, mild to acrid, without special odor; lamellae with many short ones of various lengths regularly intermingled, some forking: spores white or cream-white.

43. **Russula heterophylla** Fries, Epicr. Myc. 352. 1838.

Agaricus heterophyllus Fries, Syst. Myc. 1: 59. 1821.

Pileus fleshy, firm, convex, then plane to depressed, up to 10 cm. broad; surface yellowish-olive-green to golden-bronze-green, viscid when wet, with thin, separable pellicle, glabrous, smooth; margin incurved up to maturity, even or slightly and closely striate: context white, mild in taste; lamellae white, many short and varying in length, some forking or anastomosing near the stipe, many forking midway to the margin but not often forking twice, tapering at

each end, narrow, close; stipe white, solid, firm, equal, 4 cm. long, 1.8 cm. thick: spores pure-white, echinulate, 5–6 × 6–7 μ.

TYPE LOCALITY: Sweden.
HABITAT: In mixed woods of beech, hemlock, and other trees.
DISTRIBUTION: Vermont; also in Europe.
ILLUSTRATIONS: Badham, Escul. Mushr. Engl. *pl. 10, f. 3;* Bernard, Champ. Roch. *pl. 40, f. 2;* Cooke, Brit. Fungi *pl. 1044, 1045;* Gill. Champ. Fr. *pl. 183 (620);* Richon & Roze, Atl. Champ. *pl. 42, f. 8–10.*

44. **Russula cyanoxantha** (Schaeff.) Fries, Hymen. Eur. ed. 2. 446. 1874.

Agaricus cyanoxanthus Schaeff. Fung. Bavar. 4: Ind. 40. 1774.

Pileus convex, becoming plane, then depressed or infundibuliform, up to 10 cm. broad; surface variable in color, from lilac or purplish to olive-green, usually becoming paler or yellow in the center, bluish on the margin, viscid when wet, with pellicle partly separable, glabrous; margin at length slightly striate: context firm, white, but colored like the surface next to the pellicle, mild in taste; lamellae white, shorter ones intermixed, some forking, rounded next to the stipe, broad, rather close; stipe white, spongy-stuffed, smooth, glabrous, 5–7.5 cm. long, 1–1.6 cm. thick: spores creamy-white, nearly globose, echinulate, 8 × 9 μ.

TYPE LOCALITY: Europe.
HABITAT: In deciduous or mixed woods.
DISTRIBUTION: Vermont to North Carolina and west to Michigan; also in Europe.
ILLUSTRATIONS: Cooke, Brit. Fungi *pl. 1076;* Gill. Champ. Fr. *pl. 184 (605);* Lucand, Champ. Fr. *pl. 169;* Ricken, Blätterp. Deutschl. *pl. 16, f. 1.*

45. **Russula consobrina** Fries, Epicr. Myc. 359. 1838.

Pileus fleshy, convex, then expanded or depressed, up to 8 cm. broad; surface umber, olivaceous-fuscous, or gray, viscid when wet, glabrous; margin even, thin: context gray next to the pellicle, otherwise white, very acrid; lamellae white, many short and many forked, adnate, close; stipe white, becoming sordid or cinereous with age, firm, spongy-stuffed, 2.5–7.5 cm. long, 0.8–2 cm. thick: spores white, subglobose, 8–9 μ in diameter.

TYPE LOCALITY: Europe.
HABITAT: In coniferous woods.
DISTRIBUTION: Otsego County, New York, and Tolland, Colorado; also in Europe.
ILLUSTRATIONS: Cooke, Brit. Fungi *pl. 1055;* F. Lorinser, Essb. Schwämme *pl. 11, f. 5;* Richon & Roze, Atl. Champ. *pl. 41, f. 16–18.*

46. **Russula Earlei** Peck, Bull. N. Y. State Mus. 67: 24. 1903.

Pileus fleshy, firm, hemispheric, becoming broadly convex or nearly plane, sometimes centrally depressed, 3.8–6.2 cm. broad; surface stramineous, becoming paler with age, very viscid, glabrous; margin even: context whitish or yellowish, the taste mild; lamellae whitish, becoming yellowish, a few short, adnate, distant, thick; stipe white, equal or nearly so, firm, solid, then spongy within, 2.5–3.7 cm. long, 0.6–1.2 cm. thick: spores white, subglobose, minutely roughened, 4–5 × 6–7 μ.

TYPE LOCALITY: Suffolk County, New York.
HABITAT: Among fallen leaves in woods.
DISTRIBUTION: New York, Pennsylvania, and Virginia.
ILLUSTRATIONS: Bull. N. Y. State Mus. 67: *pl. N, f. 5–10.*

XI. **Vinaceae.** Pileus rather firm, broad; pellicle separable except on the disk; surface vinaceous to red, viscid when wet, glabrous; margin even, becoming more or less striate-tuberculate when mature: context white, unchanging, acrid, without special odor; lamellae equal or with a few short ones intermingled, forking at the inner ends: spores white.

47. **Russula vinacea** Burlingham, sp. nov.

Pileus convex, then depressed in the center, up to 10 cm. broad; surface vinaceous, becoming more or less maize-yellow on the disk, viscid when moist, with separable pellicle except on the disk, pruinose when young; margin arched for some time, becoming striate-tuberculate

when mature: context rather firm, red next to the cuticle, otherwise white, acrid; lamellae white, then more or less rust-colored, especially where bruised, sometimes a few short ones intermixed, acute and forking at the inner ends, rounded and broad at the outer ends, interveined, rather close; stipe white or with a few rust-colored spots, equal, firm, then spongy, 4.5–6 cm. long, 1–2.5 cm. thick: spores white, elliptic, strongly echinulate, 7–8.7 × 8–10 μ.

Type collected in wet woods of oak and chestnut at Cold Spring Harbor, Long Island, New York, August 3, 1912, *Gertrude S. Burlingham 85–1912* (herb. Burlingham).
DISTRIBUTION: Long Island, Staten Island, and New Jersey.

48. **Russula paxilloides** Earle, Bull. N. Y. Bot. Gard. 2: 341. 1902.

Pileus fleshy, expanded, subdepressed, 5–9 cm. in diameter; surface white on the disk, more or less cinnabar-red toward the margin, somewhat viscid, glabrous; margin entire: context white, unchanging, very acrid; lamellae white or creamy-yellow, equal, anastomosing, subsinuate, broad, close; stipe white, equal, smooth, spongy-stuffed, 5–10 cm. long, 2.5–3 cm. thick: spores white, subglobose, slightly echinulate, 7 × 9 μ.

TYPE LOCALITY: Palo Alto, California.
HABITAT: In beds of decaying oak leaves in woods.
DISTRIBUTION: Known only from the type locality.

49. **Russula Queletii** Fries; Quél. Champ. Jura Vosg. 185. 1872.

Agaricus ruber Fries, Syst. Myc. 1: 58. 1821. Not *A. ruber* Schaeff. 1774.
Russula rubra Fries, Epicr. Myc. 354. 1838.

Pileus compact, convex, then plane, 2.5–8 cm. broad; surface Indian-lake or dark-violaceous, paler on the margin, viscid when wet, glabrous; margin slightly striate: context firm, red-purple next to the pellicle, otherwise white, acrid, without special odor; lamellae white, becoming yellowish with age or in drying, some shorter, some forking, sometimes with drops of water which in drying stain the surface bluish-gray; stipe violaceous-purple, pruinose, spongy within, 5 cm. long, up to 1.2 cm. thick: spores white, subglobose, echinulate, 8–9 μ in diameter.

TYPE LOCALITY: France.
HABITAT: On the ground in spruce or pine woods.
DISTRIBUTION: Vermont and Washington; also in Europe.
ILLUSTRATIONS: Fries, Sv. Aetl. Svamp. *pl. 49* (as *R. rubra*); Gill. Champ. Fr. *pl. 633;* Lucand, Champ. Fr. *pl. 44;* Quél. Champ. Jura Vosg. 1: *pl. 24, f. 6.*

XII. **Ochroleucae.** Pileus somewhat fragile; pellicle not easily separable; surface yellow or white tinged with yellow, usually viscid when wet (dry in *R. anomala*), glabrous; margin even or becoming striate when mature: context white, unchanging, acrid, without special odor; lamellae equal, rarely forking: spores white.

50. **Russula ochroleuca** Pers. Obs. Myc. 1: 102. 1796.

Pileus fleshy, becoming plane or depressed, 5–7 cm. broad; surface luteous, fading, with a thin, closely adnate pellicle, polished; margin even, remotely striate when old: context acrid; lamellae white, then pallid, nearly equal, rounded behind, free, broad; stipe white to cinereous, firm, spongy within, reticulate-rugose, 2–3 cm. long; spores white, ovate, papillate, 7 μ in diameter.

TYPE LOCALITY: Europe.
HABITAT: In moist places in woods.
DISTRIBUTION: Alabama; also in Europe.
ILLUSTRATIONS: Cooke, Brit. Fungi *pl. 1049;* Gill. Champ. Fr. *pl. 626;* Lucand, Champ. Fr. *pl. 7;* Ricken, Blätterp. Deutschl. *pl. 18, f. 7.*

51. **Russula Raoultii** Quél. Assoc. Fr. Av. Sci. Compte Rendu 14²: 449. 1886.

Pileus broadly convex, then plane or slightly centrally depressed, 3–6 cm. broad; surface straw-yellow or massicot-yellow, viscid, glabrous; margin even or at length very faintly striate: context pure-white, unchanging, somewhat tardily peppery; lamellae white, some short ones intermingled, rarely forking next to the stipe, interspaces slightly venose, narrow, 2–6 mm.

broad, acute at the inner ends, close; stipe white, not changing color, somewhat pruinose, tapering downward, stuffed, 3–4 cm. long, 1–2 cm. thick: spores white, globose, echinulate, 6–9 μ in diameter.

TYPE LOCALITY: France.
HABITAT: In sandy soil in mixed woods or coniferous forests.
DISTRIBUTION: Tolland, Colorado; also in Europe.

52. **Russula anomala** Peck, Ann. Rep. N. Y. State Mus. **50**: 99. 1897.

Pileus fleshy, thin, nearly plane or slightly depressed in the center, 2.5–3.8 cm. broad; surface white, sometimes tinged with yellow, dry, glabrous; margin striate, thin: context white, acrid; lamellae white, pruinose, equal or with an occasional short one, rather close, adnate; stipe white, equal, solid or spongy, 2.5–3.8 cm. long, 6–8 mm. thick: spores white, roughly and bluntly echinulate, 8–9 μ in diameter.

TYPE LOCALITY: Suffolk County, New York.
HABITAT: Damp ground under trees.
DISTRIBUTION: New York.

53. **Russula simillima** Peck, Ann. Rep. N. Y. State Mus. **24**: 75. 1872.

Pileus convex, becoming plane or slightly depressed in the center, 2.5–7.5 cm. broad; surface pale-ochraceous, sometimes deeper colored in the center, viscid when young or moist, glabrous; margin striate when mature: context white, acrid; lamellae yellowish, nearly equal, some forked near the stipe, broader at the outer ends; stipe colored like the pileus or paler, equal or slightly tapering upward, spongy within, rarely hollow, 5–7.5 cm. long, 0.8–1.2 cm. thick: spores white, globose or nearly so, 8 μ in diameter.

TYPE LOCALITY: Grieg, New York.
HABITAT: On the ground in woods.
DISTRIBUTION: New York, Vermont, and North Carolina.

XIII. **Veternosae.** Pileus broad, with the pellicle separable half way to the center; surface red to violaceous, sometimes yellow on the disk, varying to entirely yellow, viscid when wet, glabrous; margin usually even at first, becoming faintly striate: context white, unchanging, acrid, without special odor; lamellae mostly equal, some forking: spores yellow.

54. **Russula veternosa** Fries, Epicr. Myc. 357. 1838.

Pileus broadly convex, then plane to depressed, 5–8 cm. broad; surface old-blood-red, peach-red, rosy, or incarnate, soon fading to whitish or yellow on the disk, viscid when wet, polished, with the thin pellicle separable only on the margin; margin even or at length sometimes faintly striate when mature: context white, acrid; lamellae white, then straw-colored, short ones present, adnate, narrow, broader at the outer ends; stipe white, equal, spongy, then hollow, smooth, fragile, 5 cm. long, up to 2 cm. thick: spores yellowish-buff, subglobose, echinulate, 8–9 μ in diameter.

TYPE LOCALITY: Sweden.
HABITAT: In oak, beech, and maple woods.
DISTRIBUTION: Vermont, New York, Michigan, and California; also in Europe.
ILLUSTRATIONS: Bres. Funghi Mang. *pl. 75;* Cooke, Brit. Fungi *pl. 1033, 1092;* Ricken, Blätterp. Deutschl. *pl. 19, f. 5.*

55. **Russula tenuipes** C. H. Kauffman, Rep. Mich. Acad. Sci. **11**: 81. 1909.

Pileus convex to expanded, thin, 7–12 cm. broad; surface deep-rosy-red or blood-red, sometimes white-spotted or tinged with orange blotches, sometimes uniform-red with or without minute rugae, viscid when wet, with the pellicle easily separable; margin at first connivent-striate: context red beneath the cuticle, otherwise white, very fragile at maturity, sometimes tardily but very acrid in taste, without special odor; lamellae white, then yellow-ochraceous,

equal, a few forked, venose-connected, adnexed to free, close; stipe white or rosy-tinted, subequal or ventricose, spongy-stuffed, obscurely rivulose, 5–9 cm. long, 2–2.5 cm. thick: spores yellow-ochraceous, subglobose, echinulate, 6–8 μ in diameter.

TYPE LOCALITY: Michigan.
HABITAT: Frequent in mixed or oak and maple woods.
DISTRIBUTION: Michigan.

56. **Russula corinthiirubra** Burlingham, sp. nov.

Pileus becoming plane or slightly depressed in the center, up to 9 cm. broad; surface Corinthian-red, fading, the center becoming tinged with maize-yellow, viscid, with the pellicle separable half way to the center, glabrous; margin becoming slightly striate-tuberculate: context tinged with red next to the pellicle, otherwise white, slowly acrid, without special odor; lamellae becoming yellow, equal, some forked next to the stipe, venose-connected, narrow at the inner ends, broad and ventricose toward the outer, rather thick, close; stipe white, firm, nearly equal, 4 cm. long, 1.7 cm. thick: spores ochraceous, subglobose, echinulate, 7 × 8.7 μ.

Type collected in sandy soil under oak, pignut, and chestnut, at Cold Spring Harbor, Long Island, New York, August 2, 1912, *Gertrude S. Burlingham 77–1912* (herb. Burlingham).
DISTRIBUTION: Known only from the type locality.

57. **Russula aurantialutea** C. H. Kauffman, Rep. Mich. Acad. Sci. 11: 81. 1909.

Pileus convex, then plane to depressed in the center, thin, 5–12 cm. broad; surface honey-yellow to Naples-yellow in the center, coppery-orange toward the margin, viscid and shining when moist, pellicle separable, except on the disk, glabrous; margin even at first, becoming slightly striate-tuberculate: context yellowish next to the cuticle, otherwise white, unchanging, fragile, acrid, the odor not noticeable; lamellae becoming maize-yellow, dusted with the spores, mostly equal, many forking next to the stipe, venose-connected, acute at the inner ends, broad at the outer, rather close; stipe white, nearly equal, firm, then spongy-stuffed, glabrous, even, 4–10 cm. long, 1.5–2.5 cm. thick: spores ochraceous-yellow, subglobose, 8–9 μ in diameter.

TYPE LOCALITY: Michigan.
HABITAT: In leaf-mold in hemlock, mixed, or deciduous woods.
DISTRIBUTION: Michigan and Vermont.

58. **Russula borealis** C. H. Kauffman, Rep. Mich. Acad. Sci. 11: 69. 1909.

Pileus fleshy, firm, convex, then plane to slightly depressed, often with a sinus on one side, 5–9 cm. broad; surface Morocco-red, uniform or darker on the disk, not fading, hardly viscid, pellicle somewhat separable; margin even or obscurely striate: context white, red under the cuticle, not very thick, mild, sometimes slightly and tardily acrid, odor none; lamellae ochraceous, the edges often reddish anteriorly, equal, a few forked toward the stipe, moderately close, rather broad, broader at the outer ends, narrowly adnate, interspaces venose; stipe white, tinged with red in places, thickened below, firm, spongy-stuffed, 5–7 cm. long, 1.5–2 cm. thick: spores deep-ochraceous-yellow in mass, globose, finely echinulate, 7–8 μ in diameter.

TYPE LOCALITY: Michigan.
HABITAT: In mixed woods of hemlock, spruce, yellow birch, and hard maple.
DISTRIBUTION: Vermont and Michigan.

59. **Russula atroviolacea** Burlingham, sp. nov.

Pileus convex, then plane and depressed in the center, 4–9 cm. broad; surface haematite-red or diamine-brown, uniformly colored or rarely lighter in the center, viscid when wet, with separable pellicle, glabrous; margin even: context fleshy, solid, not fragile but thin, purplish under the cuticle, otherwise white, tardily and slightly peppery; lamellae cream-colored, darker with age or in drying, mostly equal, branching somewhat next to the stipe, interspaces venose, rather close, adnate, 6–10 mm. broad; stipe equal or slightly larger below, white, not

discolored, slightly pruinose to glabrous, solid, becoming hollow, at least at the base, 4–6 cm. long, 1.5–2 cm. thick: spores ochraceous, globose, echinulate, 7–10 μ in diameter.

Type collected on the ground under willows at Boulder Park, Tolland, Colorado, 2775 m. elevation, July 14, 1914, *L. O. Overholts 1909* (herb. Overholts; extype herb. Burlingham).

DISTRIBUTION: Known only from the type locality.

60. **Russula Robinsoniae** Burlingham, sp. nov.

Pileus convex, then plane, up to 15 cm. broad; surface vinous-purple but not uniformly colored, varying with dark-purple and some chamois-color and greenish intermingled, viscid when wet, with the pellicle separable, at least on the margin, glabrous; margin even: context rather thick, white, red next to the cuticle, bitter and peppery; lamellae white, turning yellow very soon, a few short ones present, some forking next to the stipe, venose-connected, very narrow at the inner ends, rounded at the outer, subdistant, rather narrow; stipe stained more or less with rose-color or vinous-purple, bulbous at the base, spongy, 6–10 cm. long, 2.5 cm. thick: spores pale-yellow, echinulate, globose to subglobose, 7–8.5 μ in diameter.

Type collected on the ground under spruce trees at Yellowstone Lake, Wyoming, August 9, 1912, *Winifred J. Robinson* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

61. **Russula expallens** Gill. Tabl. Anal. 49. 1884.

Pileus convex-conic, at length plane, 4.5–8 cm. broad; surface varying in color from vinous-purple with the center almost black to Indian-lake and dull-garnet, or even salmon-old-rose with age, sometimes fading to garnet-brown or umber with some greenish or yellowish-green, especially between the disk and the margin, viscid when wet, the pellicle separable on the margin, glabrous; margin even: context white or very slightly tinged with rose next to the cuticle, acrid, without special odor; lamellae white, then pale-yellow, equal or a few scattered short ones present, some forking next to the stipe, rounded at the outer ends, acute at the inner, close; stipe tinged like the pileus, usually white at the base, tapering upward, spongy, 3–7 cm. long, 1–2 cm. thick; spores ochroleucous, ovoid, apiculate, minutely echinulate, 7–8 × 8–9 μ.

TYPE LOCALITY: France.
HABITAT: In spruce, fir, or mixed woods.
DISTRIBUTION: Newfane, Vermont; also in Europe.
ILLUSTRATIONS: Gill. Champ. Fr. *pl. 195 (611)*.*

XIV. **Sanguineae.** Pileus without the pellicle noticeably separable, rather firm; surface red, dry, glabrous; margin even: context white, unchanging, acrid; lamellae mostly equal, forked more or less: spores white to cream-white or very pale yellow.

62. **Russula sanguinea** (Bull.) Fries, Epicr. Myc. 351. 1838.

Agaricus sanguineus Bull. Herb. Fr. *pl. 42*. 1780.

Pileus convex, then expanding, and at length depressed in the center, 5–7.5 cm. broad; surface blood-red or becoming pale near the margin, glabrous; margin even, acute: context firm, white, cheesy, acrid; lamellae white, some short ones present, forked, at first adnate, then decurrent, close, narrow; stipe white or reddish, at first contracted at the apex, then equal, spongy-stuffed: spores cream-white, broadly elliptic to ovate, echinulate, 6–7 × 7–8.7 μ.

TYPE LOCALITY: France.
HABITAT: On the ground in woods.
DISTRIBUTION: North Carolina and Vermont; also in Europe.
ILLUSTRATIONS: Bull. Herb. Fr. *pl. 42;* Gill. Champ. Fr. *pl. 180 (635);* Lanzi, Funghi Mang. *pl. 50, f. 2;* Noulet & Dassier, Traité Champ. *pl. 16, f. B;* Ricken, Blätterp. Deutschl. *pl. 19, f. 2*.

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* Gillet doubtfully refers this species to *R. drimeja* Cooke, Grevillea **10**: 46. 1881. Not having seen specimens of *R. drimeja*, however, I do not feel warranted in considering these two the same species. Peltereau, in Bull. Soc. Myc. Fr. **24**: 111. 1908, gives reasons for considering *R. drimeja* Cooke, *R. expallens* Gill., and *R. Queletii* Fries varieties of the same species. *R. Queletii* is described as having white spores and so it occurs here. This would be sufficient for separating it from *R. expallens*, which has yellow spores.

63. **Russula mexicana** Burl. Mycologia **3**: 26. 1911.

Pileus convex to depressed, 6 cm. broad; surface pale-red, dry, with inseparable pellicle, smooth; margin striate: context white, 5 mm. thick at the center, promptly and decidedly acrid; lamellae white when young, becoming pale-yellow at maturity, equal, simple, adnate; stipe roseous, cylindric, glabrous, 4 cm. long, 2 cm. thick: spores pale-yellow, subglobose, echinulate, 7–8 μ in diameter; cystidia numerous.

TYPE LOCALITY: Near Jalapa, Mexico.
HABITAT: On humus under the end of a log in rather open woods.
DISTRIBUTION: Known only from the type locality.

XV. **Palustres.** Pileus with separable pellicle; surface viscid when wet, glabrous; margin striate when mature: context white, fragile, acrid, without special odor; lamellae equal, not forking: spores pale-yellow.

64. **Russula palustris** Peck, Ann. Rep. N. Y. State Mus. **53**: 842. 1900.

Pileus hemispheric, expanding and becoming nearly plane, 5–7.5 cm. broad; surface tinged with slate-violet or in the center vinous-purple surrounded by yellowish, viscid when moist, with separable pellicle, glabrous; margin slightly striate when mature: context white, tinged with reddish-buff under the cuticle, fragile, tardily acrid; lamellae whitish, becoming pale-yellow, equal, venose-connected, narrowed at the stipe, not forking unless close to the stipe, close; stipe white or tinged with slate-violet or yellowish, equal, spongy or hollow, glabrous, 2–7.5 cm. long, 0.7–1 cm. thick: spores pale-yellow, subglobose, echinulate, 7.6–8.5 × 8.5–11.5 μ.

TYPE LOCALITY: St. Lawrence County, New York.
HABITAT: Under alders in swamps.
DISTRIBUTION: Maine, New York, and Vermont.

65. **Russula gracilis** Burlingham, sp. nov.

Pileus convex, becoming plane or at length slightly depressed in the center, up to 6 cm. broad; surface pale-lilac-rose to salmon-lilac, much darker in the center, sometimes gray-green or stone-color between the center and margin, fading, viscid when wet, with separable pellicle, glabrous; margin striate: context white, acrid, without special odor; lamellae white, then cream-colored, equal, entire, rounded at the outer ends, narrow behind, appearing slightly decurrent when mature, rather broad, close, pruinose; stipe white, rarely tinged with pink, tapering upward, spongy within, 5 cm. long, 0.8 to 2 cm. thick: spores pitchpin, globose to elliptic, echinulate, with vacuole, 7 × 7–9 μ.

Type collected among weeds in maple, spruce, and willow woods bordering a stream at Stratton, Vermont, August, 1910, *Gertrude S. Burlingham 212–1910* (herb. Burlingham; extype herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

XVI. **Glaucae.** Pileus with pellicle separable, some shade of green, viscid when wet, glabrous; margin even to slightly striate when mature: context white, unchanging, mild, without special odor; lamellae mostly equal, some forking near the stipe: spores pale-yellow.

66. **Russula glauca** Burlingham.

Agaricus griseus Pers. Syn. Fung. 445. 1801. Not *A. griseus* Batsch, 1783.
Russula grisea Fries, Epicr. Myc. 361. 1838.
Russulina grisea Schröt. Krypt.-Fl. Schles. 3[1]: 551. 1889.

Pileus fleshy, firm, convex, then expanding, finally depressed in the center, up to 9 cm. broad; surface varying in color from glaucous to leaden-green or slate-green intermingled with a tinge of rosy-flesh to salmon-flesh or even maize-yellow, fading, viscid when wet, the pellicle separable half way to the center, having a pruinose bloom when young; margin even at first, at length faintly and finely striate on the very narrow edge: context tinged like the surface next to the cuticle, otherwise white, thin, mild in taste, without special odor; lamellae white,

becoming cream-colored to maize-yellow, mostly equal, some forking next to the stipe, rounded at the outer ends, narrow at the inner, close, thin; stipe white, firm, solid, equal or tapering upward, 4–5 cm. long, 1–1.5 cm. thick: spores pitchpin, elliptic, very finely echinulate, 5 × 7 μ.

TYPE LOCALITY: France.
HABITAT: In grass in thin woods of birch, maple, beech, spruce, or fir.
DISTRIBUTION: Vermont; also in Europe.
ILLUSTRATIONS: Bres. Funghi Mang. *pl. 77;* Gill. Champ. Fr. *pl. 191 (616);* Ricken, Blätterp. Deutschl. *pl. 18, f. 1.*

67. **Russula subolivascens** Burlingham.

Agaricus olivascens Secr. Mycogr. Suisse **1**: 493. 1833. Not *A. olivascens* Batsch, 1783.
Russula olivascens Fries, Epicr. Myc. 361. 1838.

Pileus convex to plane, umbilicate, 5–8 cm. broad; surface olivaceous, pale-olivaceous, or reseda-green, becoming yellow on the disk, without pinkish or reddish tints, somewhat viscid when moist, with pellicle separable on the margin, glabrous; margin even: context white, rather thick, mild in taste; lamellae white at first, then yellow, deep-yellow in drying, subequal, some forking next to the stipe, narrow behind, broad in front, adnate, crowded; stipe white, firm, spongy within, smooth, 4–7 cm. long, 1.5–2 cm. thick: spores pitchpin, broadly elliptic, slightly pointed at on end, echinulate, 7 × 8.75 μ.

TYPE LOCALITY: Europe.
HABITAT: In leafy forests.
DISTRIBUTION: Long Island, Vermont, and Wyoming; also in Europe.
ILLUSTRATIONS: Cooke, Brit. Fungi *pl. 1035;* Fries, Ic. Hymen. *pl. 172;* Ricken, Blätterp. Deutschl. *pl. 18, f. 5.*

68. **Russula aeruginea** Lindbl.; Fries, Monog. Hymen. Suec. **2**: 198. 1863.

Pileus fleshy, from convex to plane, slightly depressed in the center, 5–8 cm. broad; surface aerugineous-green, leaden-gray, or paler, the center sometimes tinged with umber, viscid when wet, soon dry, dull and sometimes pruinose when dry; margin slightly striate-tuberculate, thin: context white, the taste mild; lamellae white, cream-colored in age or in drying, equal, sometimes forking next to the stipe, close to subdistant, narrow at the inner ends, rounded at the outer; stipe white, nearly equal, glabrous, firm, then spongy, 4–5 cm. long, 1–1.2 cm. thick: spores whitish or tinged with cream-color, subglobose, echinulate, 7–8 μ in diameter.

TYPE LOCALITY: Sweden.
HABITAT: In coniferous or mixed woods.
DISTRIBUTION: New England to Michigan; also in Europe.
ILLUSTRATION: Fries, Ic. Hymen. *pl. 173, f. 3.*

69. **Russula graminicolor** Quél. Fl. Myc. Fr. 347. 1888.

Pileus convex, becoming a little concave as it expands, thin, up to 7 cm. broad; surface grass-green, russet-green with age, bistre in the center, viscid when wet, with separable pellicle, glabrous; margin striate and brighter colored: context white, fragile, mild, inodorous; lamellae cream-white, deeper colored with age or in drying, often joined at the base, adnate; stipe white, then sordid-yellowish-brown, glabrous, furrowed, firm, spongy: spores citrine or pitch-pin, ocellate, echinulate, elliptic, 7 × 8.7 μ.

TYPE LOCALITY: Europe.
HABITAT: Under birch trees.
DISTRIBUTION: Vermont; also in Europe.
ILLUSTRATION: Ricken, Blätterp. Deutschl. *pl. 16, f. 2.*

XVII. **Fingibiles.** Pileus with pellicle somewhat separable; surface yellowish or white mixed with yellow, viscid when wet, glabrous; margin becoming striate: context white, unchanging, mild, without special odor; lamellae equal, some forked next to the stipe: spores white.

70. **Russula fingibilis** Britz. Jahresb. Nat. Ver. Augsburg **28**: 140. 1885.

Pileus convex, then plane, becoming depressed in the center, of medium size; surface flavous, buff, or fawn, viscid when wet, glabrous; margin becoming striate-tuberculate: context white, mild, without odor; lamellae white, becoming cream-colored with age or in drying, equal, some forking next to the stipe, acute at the inner ends, close; stipe white, equal, firm, then spongy: spores white, subglobose, minutely echinulate, 6–8 × 8–10 μ.

TYPE LOCALITY: Bavaria.
HABITAT: Mixed woods.
DISTRIBUTION: New Hampshire and Vermont; also in Europe.
ILLUSTRATIONS: Britz. Hymen. Sudb. Russ. *f. 32a, 32b;* Cooke, Brit. Fungi *pl. 1048.*

71. **Russula stricta** Murrill, Mycologia **4**: 166. 1912.

Pileus firm, convex to expanded, becoming depressed in the center, 5 cm. or more broad; surface isabelline with testaceous and ochraceous hues, dry, viscid when wet, with pellicle partly separable, glabrous, smooth; margin striate, thin: context white, thin, firm, mild in taste, with pleasant odor; lamellae pale-cream-colored, a few forked, adnate, close, rather narrow; stipe milk-white, subequal, smooth, glabrous, polished, 5 cm. long, 1–1.5 cm. thick: spores white, subglobose, densely and roughly echinulate, 6–8 μ in diameter.

TYPE LOCALITY: New York Botanical Garden, New York.
HABITAT: On the ground in thin oak woods.
DISTRIBUTION: Known only from the type locality.
ILLUSTRATION: Mycologia **4**: *pl. 68, f. 6.*

72. **Russula albida** Peck, Bull. N. Y. State Mus. **1**[2]: 10. 1888.

Pileus fleshy, thin, convex, becoming nearly plane or slightly depressed in the center, 2.5–5 cm. broad; surface white, often tinged with yellow in the center, slightly viscid when moist, glabrous; margin even or slightly striate, thin, sometimes upturned in age: context white, mild or slightly and tardily bitterish and unpleasant, edible; lamellae white or whitish, equal, entire, sometimes forked at the base, rather close, thin, adnate or subdecurrent, the interspaces often venose; stipe white, equal or slightly tapering upward, stuffed to hollow, glabrous, 3.5–7.5 cm. long, 6–12 mm. thick: spores white or with a faint yellowish tint, subglobose, about 8 μ in diameter

TYPE LOCALITY: Sandlake, New York.
HABITAT: Among fallen leaves in woods.
DISTRIBUTION: New England to North Carolina and west to Michigan.
ILLUSTRATION: Bull. N. Y. State Mus. 105: *pl. 96, f. 1–7.*

XVIII. **Luteae.** Pileus with separable pellicle; surface yellow to isabelline, viscid when wet, glabrous; margin even or becoming only slightly striate when old: context white, unchanging, mild or at length slightly acrid, without special odor; lamellae equal, simple: spores yellow.

73. **Russula lutea** (Huds.) Fries, Epicr. Myc. 363. 1838.

Agaricus luteus Huds. Fl. Angl. ed. 2. 611. 1778.
Russulina lutea Schröt. Krypt.-Fl. Schles. **3**[1]: 552. 1889.

Pileus plane, slightly depressed in the center, 3–6 cm. broad; surface luteous, fading, viscid, with separable pellicle, glabrous; margin even or slightly striate with age: context white, mild, without special odor; lamellae becoming egg-yellow, equal, venose-connected, narrow, especially at the inner ends, close; stipe white, unchanging, spongy-stuffed, then hollow, fragile, 3–5 cm. long, 4–10 mm. thick: spores yellow, globose, echinulate, 8–10 μ in diameter.

TYPE LOCALITY: Europe.
HABITAT: Beech woods.
DISTRIBUTION: From Maine west to Michigan; also in Europe.
ILLUSTRATIONS: Bres. Funghi Mang. *pl. 79;* Cooke, Brit. Fungi *pl. 1082;* Gill. Champ. Fr. *pl. 622;* Lucand, Champ. Fr. *pl. 66;* Ricken, Blätterp. Deutschl. *pl. 18, f. 3.*
EXSICCATI: Sydow, Myc. Mar. *1501.*

74. **Russula flaviceps** Peck, Ann. Rep. N. Y. State Mus. 53: 843. 1900.

Pileus convex, then expanding and slightly depressed in the center, 5–10 cm. broad; surface amber-yellow to golden-yellow, viscid, with separable pellicle, glabrous; margin even when young, faintly striate when old: context white, mild or slightly acrid; lamellae white, soon becoming Naples-yellow and dusted with the spores, equal, simple, adnate or slightly rounded next to the stipe, broader at the outer ends, rather narrow, close; stipe white, equal or nearly so, stuffed or spongy within, 4–6.5 cm. long, 8–12 mm. thick: spores maize-yellow to pitchpin, subglobose, about 8 μ in diameter.

TYPE LOCALITY: Sullivan County, New York.
HABITAT: In deciduous woods.
DISTRIBUTION: New York, Vermont, and the Pacific coast.

75. **Russula sulcatipes** Murrill, Mycologia 4: 291. 1912.

Pileus convex to plane or depressed, reaching 7 cm. broad; surface pale-avellaneous-isabelline, dry, pruinose, smooth; margin slightly striate, becoming more conspicuously so on drying: context white, very thin, very firm, mild and nutty to the taste, the odor not characteristic; lamellae white, becoming cream-colored or somewhat darker on drying, adnate, plane, subdistant; stipe milk-white, equal or slightly larger below, with rather conspicuous longitudinal raised lines, glabrous, solid, 5 cm. long, 1.3 cm. thick: spores hyaline under the microscope, globose, roughly tuberculate, 7–9 μ in diameter.

TYPE LOCALITY: Bronx Park, New York City.
HABITAT: In oak woods.
DISTRIBUTION: Known only from the type locality.
ILLUSTRATION: Mycologia 4: *pl. 76, f. 4.*

XIX. **Decolorantes.** Pileus with the pellicle partly separable; surface red, orange, or yellow, viscid when wet, glabrous; margin striate with age: context white, becoming gray to black where bruised or in drying, mild in taste, without special odor; lamellae equal, some forking near the stipe: spores white or yellow.

76. **Russula decolorans** Fries, Epicr. Myc. 361. 1838.

Agaricus decolorans Fries, Syst. Myc. 1: 56. 1821.
Russulina decolorans Schröt. Krypt.-Fl. Schles. 3[1]: 551. 1889.

Pileus globose, becoming plane with the center slightly depressed, up to 10 cm. broad; surface varying from light-red to coppery-orange, bronzy-old-rose, or salmon, the center often ocher, fading, viscid when moist, pellicle partly separable, glabrous; margin even, becoming striate with age: context white, becoming cinereous with age or where injured, firm, becoming fragile with age, the taste mild; lamellae white, becoming maize-yellow, somewhat gray in drying, equal, some forking next to the stipe, venose-connected, acute at the inner ends and broad at the outer, rather broad, close; stipe white, becoming cinereous, nearly equal, firm, becoming spongy, 6–9 cm. long, 1.5–3 cm. thick: spores pitchpin, subglobose, coarsely echinulate, 8.5–9 × 10.5 μ.

TYPE LOCALITY: Sweden.
HABITAT: In coniferous or mixed woods.
DISTRIBUTION: New England to Long Island and west to Michigan; also in Europe.
ILLUSTRATIONS: Cooke, Brit. Fungi *pl. 1079;* Ricken, Blätterp. Deutschl. *pl. 17, f. 5.*

77. **Russula obscura** Romell, Oefv. Sv. Vet.-Akad. Förh. 48: 179. 1891.

Russula vinosa Lindbl. Svampbok 67. 1901.

Pileus convex, then plane to centrally depressed, usually up to 7 cm. broad, rarely much larger; surface dull-dark-red, often blackish in the center, viscid when wet, slightly pruinose when dry; margin even, slightly striate with age; context white, becoming ashy-gray with age or where bruised, mild in taste; lamellae white, then pale-yellow, equal, some forking next to the stipe, venose-connected, abruptly narrowed or rounded behind and slightly adnexed, close, rather broad; stipe white, sometimes tinged with red, becoming gray or blackish with

age or where bruised, mostly equal, firm but spongy within, 4–6 cm. long, 1–1.5 cm. thick: spores ochroleucous, elliptic, finely echinulate, 7 × 8.7 μ.

TYPE LOCALITY: Sweden.
HABITAT: Usually in coniferous woods.
DISTRIBUTION: New England States, New York, Mississippi, and Washington; also in Europe.
ILLUSTRATION: Mycologia 4: *pl. 76, f. 5.*

78. **Russula rubescens** Beardslee, Mycologia 6: 91. 1914.

Pileus convex, then expanded and depressed, 5–8 cm. broad; surface red, paler on the margin, fading with age, viscid when wet; margin thin, striate: context mild in taste; lamellae white, forked, especially at the base, adnate, close; stipe white, becoming cinereous without and within with age, often blackening with age or in drying, quickly becoming red and finally black when wounded, stuffed, becoming hollow: spores pale-yellow, subglobose, roughly echinulate, 7–9 μ in diameter; cystidia numerous, large, 50–65 × 10–12 μ.

TYPE LOCALITY: Asheville, North Carolina.
DISTRIBUTION: Known only from the type locality.
ILLUSTRATION: Mycologia 6: *pl. 121, f. 1.*

79. **Russula nigrescentipes** Peck, Bull. Torrey Club 33: 214. 1906.

Pileus convex, becoming nearly plane or centrally depressed, 3–5 cm. broad; surface bright-red, viscid when moist, glabrous; margin striate: context white, the taste mild; lamellae white, equal, narrowed next to the stipe and united, nearly free, much broader in front, close; stipe white, slightly tinged with red at the base, becoming blackish where handled or bruised, equal, glabrous, tough and elastic, 3–5 cm. long, 6–8 mm. thick: spores white, globose to subglobose, very finely echinulate, 6–8 μ in diameter.

TYPE LOCALITY: St. Louis, Missouri.
HABITAT: In woods.
DISTRIBUTION: Vermont to Ohio and Missouri.

80. **Russula subdepallens** Peck, Bull. Torrey Club 23: 412. 1896.

Pileus fleshy, convex, then expanded or depressed in the center, often irregular, 8–16 cm. broad; surface blood-red or purple-red with scattered luteous spots, then paler or subwhite, viscid; margin striate to striate-tuberculate with age: context fragile, white, grayish with age, mild in taste; lamellae white or whitish, venose-connected, subdistant, broad, adnate; stipe white, solid, spongy within, 4–8 cm. long, 1.5–2.3 cm. thick: spores white, globose, 8 μ in diameter.

TYPE LOCALITY: Trexeltown, Pennsylvania.
HABITAT: On the ground under hickory, oak, or chestnut.
DISTRIBUTION: Vermont, Pennsylvania, Massachusetts, and Michigan.

81. **Russula flava** Romell, Nord. Svampb. 27. 1895.

Pileus fleshy, broadly convex, becoming plane or slightly depressed in the center, 5–8 cm. broad; surface flavous or golden-yellow, sometimes discolored with age, viscid when wet, glabrous; margin even to slightly striate when mature: context white, becoming gray with age and in drying, the taste mild; lamellae white, becoming pale-yellow, then gray with age, equal, not forking, adnexed, close, broader at the outer ends; stipe white, becoming more or less gray with age or in drying, nearly equal, obscurely reticulate-rivulose, spongy, 5–8 cm. long, 1–2 cm. thick: spores pale-yellow, globose, echinulate, 8–9 μ in diameter.

TYPE LOCALITY: Sweden.
HABITAT: In mixed woods of fir, spruce, beech, and maple.
DISTRIBUTION: New England west to Michigan; also in Europe.

XX. **Betulinae.** Pileus rather broad, with the pellicle separable on the margin at least; surface some shade of salmon, rosy, or vinaceous, viscid when wet, glabrous; margin even at first, sometimes striate when old: context white, unchanging, mild, without special odor (one species is bitter and has a fetid odor); lamellae mostly equal, some forking at the stipe: spores ochraceous.

82. **Russula betulina** Burlingham, sp. nov.

Pileus convex-umbilicate, then plane to depressed, 6–9 cm. broad; surface yellowish-salmon to reddish-salmon, salmon-flesh, or Etruscan-red, usually paler in the center, becoming deeper colored with age, viscid when moist, glabrous; margin even at first, then striate-tuberculate: context colored like the surface next to the cuticle, otherwise white, rather firm, taste mild, odor none; lamellae white, then maize-yellow, mostly equal, forking near the stipe, acute at the inner ends and rounded at the outer, close; stipe white, nearly equal, firm, stuffed, becoming spongy, glabrous, 3.5–7 cm. long, 1–2 cm. thick: spores ochraceous, broadly elliptic, echinulate, 8.7 × 12.2 μ or smaller.

Type collected in rather sandy, black, vegetable soil in a moist place under yellow birch at Newfane, Vermont, July 5, 1911, *Gertrude S. Burlingham 28–1911* (herb. Burlingham).

DISTRIBUTION: Vermont and Colorado.

83. **Russula luteobasis** Peck, Bull. Torrey Club **31**: 179. 1904.

Pileus convex, then nearly plane, 2.5–8 cm. broad; surface rosy or red, then all paler, yellowish in the center, viscid when wet, cuticle separable, glabrous; margin even, indistinctly striate when old; context white or whitish, the taste mild; lamellae white to cream-yellow or pale-ochraceous when old or in drying, equal, not forking, except near the stipe, adnexed to adnate, rather close, broad; stipe white, yellow to orange-yellow at the base, subequal, stuffed, 2.5–7 cm. long, 0.4–2 cm. thick: spores yellow-ochraceous, subglobose, minutely roughened, 7–8 μ in diameter.

TYPE LOCALITY: St. Louis, Missouri.
HABITAT: On the ground in woods.
DISTRIBUTION: Ohio and Missouri.

84. **Russula roseipes** (Secr.) Bres. Fungi Trid. **1**: 37. 1883.

Agaricus alutaceus roseipes Secr. Mycogr. Suisse **1**: 478. 1833.

Pileus fleshy, from convex to plane or depressed, 4–7 cm. broad; surface rosy-incarnate, rosy-orange, or rosy-subochraceous, with white or pale spots, fading with age, viscid when wet, soon dry and then more or less pruinose; margin striate-tuberculate when mature: context white or yellowish, mild, odor agreeable; lamellae white to ochraceous, equal, some forked, venose-connected, adnexed to free, subdistant; stipe white, here and there rosy-sprinkled, stuffed, then hollow, 3–6 cm. long, 0.8–1.5 cm. thick: spores ochraceous, globose, echinulate, 8–10 μ in diameter.

TYPE LOCALITY: Italy.
HABITAT: In coniferous or mixed woods.
DISTRIBUTION: Vermont to Michigan; also in Europe.
ILLUSTRATIONS: Bres. Fungi Trid. *pl. 40;* Hard, Mushrooms *f. 151;* Mem. N. Y. State Mus. **3**: *pl. 54, f. 1–7*.

85. **Russula subalutacea** Burlingham, sp. nov.

Pileus fleshy, firm, convex, then becoming plane, 6–11 cm. broad; surface Pompeian-red, light-Corinthain-red, livid-brown to deep-livid-brown, vinaceous-purple, or dull-Indian-purple, fading more or less at the center or on the margin, sometimes to whitish, viscid when wet, soon dry, with the pellicle separable on the margin, the cuticle rarely cracking near the center, glabrous; margin always even, inrolled for some time: context pink next to the cuticle, otherwise white or grayish-white, mild, without special odor; lamellae white, then cream-colored and finally ochraceous, equal, some forking near the stipe or part way to the margin, venose-connected, rounded at the outer ends, narrowed and adnexed behind, close, 7–12 mm. broad; stipe white or marked with pinkish, equal or tapering downward, solid, very firm, pruinose when young, 4–6 cm. long, 1.5–3 cm. thick: spores ochraceous, globose to subglobose, echinulate, 8.5 × 10 μ.

Type collected on the ground in mixed woods at Tolland, Colorado, 2775 m. elevation, August 3, 1914, *L. O. Overholts 2093* (herb. Overholts; extype herb. Burlingham).

DISTRIBUTION: In various places around Tolland, Colorado.

86. **Russula astringens** Burlingham, sp. nov.

Pileus broadly convex, then plane or a little depressed in the center, 9–11 cm. broad; surface blood-red-brown to red-brown, darker in the center, viscid when wet, with the pellicle

separable on the margin, glabrous; margin even: context tinged like the surface next to the cuticle, otherwise white, firm, mild when young, bitter and more or less astringent when mature, not acrid at any time, odor somewhat fetid, more disagreeable in drying and persisting for a long time; lamellae white, then pale-yellow, equal or rarely with a few short ones, some forking near the stipe, sometimes midway to the margin or near the margin, broad at the outer ends, acute at the inner and slightly sinuate or depressed next to the stipe, close; stipe white or sometimes tinged with pink, solid, 3.5–5 cm. long, 1.5–3 cm. thick: spores maize-yellow, elliptic, echinulate, 5–6 × 7–8 μ.

Type collected in sandy loam by the roadside at Buck Hill, Townshend, Vermont, August 30, 1912, *Gertrude S. Burlingham 365–1912* (herb. Burlingham).

DISTRIBUTION: Townshend and Newfane, Vermont.

XXI. **Ochrophyllae.** Pileus with pellicle not easily separable; surface red, dry, glabrous; margin even for the most part: context firm, white, unchanging, mild, without special odor; lamellae yellowish, becoming ochraceous, equal, a few forking next to the stipe: spores ochraceous.

87. **Russula ochrophylla** Peck, Ann. Rep. N. Y. State Mus. **50**: 100. 1897.

Pileus fleshy, firm, convex, becoming nearly plane or slightly depressed in the center, 5–10 cm. broad; surface purple or dark-purplish-red, dry, the cuticle not easily separable, unpolished, glabrous; margin even, rarely very slightly striate when old: context white, purplish under the adnate cuticle, mild, edible; lamellae at first yellowish, becoming bright-ochraceous-buff when mature, pruinose, equal, a few forked at the stipe, venose-connected, subdistant, adnate; stipe reddish or rose-tinted, paler than the pileus, white in one variety, solid, spongy within, equal or nearly so, 3.5–6.5 cm. long, 1–2 cm. thick: spores bright-ochraceous-buff, globose, verruculose, 10 μ in diameter.

TYPE LOCALITY: New York State.
HABITAT: Under oak trees.
DISTRIBUTION: Vermont west to Ohio and Missouri, and south to the District of Columbia.
ILLUSTRATIONS: Mem. N. Y. State Mus. **3**: *pl. 54, f. 8–14.*

XXII. **Integrae.** Pileus with separable pellicle; surface some shade of red, viscid when wet, glabrous; margin becoming striate-tuberculate: context white, unchanging, mild, without special odor; lamellae equal, simple or rarely with a few scattered forking ones: spores pale yellow.

88. **Russula integra** (L.) Fries, Epicr. Myc. 360. 1838.

Agaricus integer L. Sp. Pl. 1171. 1753.
Russulina integra Schröt. Krypt.-Fl. Schles. **3**[1]: 550. 1889.

Pileus fleshy, becoming expanded and depressed in the center, up to 10 cm. broad; surface varying in color from dark-dull-red to reddish-brown or more or less sordid-buff, fading, viscid when wet, with separable pellicle, glabrous; margin thin, at length coarsely tuberculate-striate: context white, mild; lamellae from white to yellow-pulverulent, equal, nearly free, distant, broad; stipe white at first, clavate, then subequal, spongy-stuffed, rather short: spores pale-yellow, globose, echinulate, 7–9 μ in diameter.

TYPE LOCALITY: Sweden.
HABITAT: In woods.
DISTRIBUTION: New York and Connecticut; also in Europe.
ILLUSTRATIONS: Cooke, Brit. Fungi *pl. 1099;* Gill. Champ. Fr. *pl. 193 (618)*; Lanzi, Funghi Mang. *pl. 47, f. 1;* Lucand, Champ. Fr. *pl. 97;* Schaeff. Fung. Bavar. *pl. 92* (as *Agaricus ruber*).

89. **Russula melliolens** Quél. Assoc. Fr. Av. Sci. Compte Rendu **26**[2]: 449. 1898.

Pileus convex, then plane and frequently depressed in the center, rather large; surface variable in color, red, red-orange, incarnate or salmon, bay to bay-purple, or gray-violet, sometimes with green intermixed, viscid when wet, glabrous; margin blunt, usually striate with age and sometimes sulcate: context white or rosy next to the cuticle, mild in taste, with a

farinaceous odor noticeable when drying; lamellae white or cream-white, changing to brownish-ochraceous with age, equal, rarely forking, sometimes connected, rounded and broad in front, narrowed behind, free or subfree; stipe white, rarely rose-colored, pulverulent when young: spores cream-colored, subglobose, nearly smooth, but under high magnification appearing tuberculate and reticulate.

TYPE LOCALITY: France.
HABITAT: On the ground in woods.
DISTRIBUTION: Asheville, North Carolina; also in Europe.
ILLUSTRATIONS: Assoc. Fr. Av. Sci. Compte Rendu **26**[2]: *pl. 3, f. 630;* Bull. Soc. Myc. Fr. **26**: *pl. 110, f. 2, 3.*

90. **Russula fulvescens** Burlingham, sp. nov.

Pileus fleshy, convex, then a little depressed in the center, up to 8 cm. broad; surface varying from apricot-color on the margin to more yellowish and darker in the center, becoming fulvous in drying, viscid when moist, with the pellicle separable nearly to the center, glabrous, smooth and somewhat polished; margin even, then slightly striate-tuberculate on the extreme edge: context tinged like the surface next to the pellicle, otherwise white, mild, without noticeable odor; lamellae white, then cream-colored, deeper yellow in drying, mostly equal, some forking next to the stipe, abruptly narrowed at the inner ends, venose-connected, up to 1 cm. broad, close; stipe white or very slightly sordid on one side, glabrous, subequal, spongy within, 4–6 cm. long, 1.5–2.5 cm. thick: spores pale-yellow, mostly elliptic, obliquely apiculate, strongly echinulate, usually with a vacuole, 7–8.7 × 9–12 μ.

Type collected in spruce and balsam fir woods at Stratton, Vermont, August 12, 1911, *Gertrude S. Burlingham 129–1911* (herb. Burlingham).
DISTRIBUTION: Known only from the type locality.

91. **Russula rubrotincta** (Peck) Burlingham, sp. nov.

Russula integra rubrotincta Peck, Ann. Rep. N. Y. State Mus. 54: 164. 1901.

Pileus fleshy, convex, then spreading and somewhat depressed in the center, up to 13 cm. broad; surface Morocco-red, varying to Dragon's blood and Mars-orange, often apricot-yellow in the center, viscid when wet, polished when dry, the cuticle separable on the margin, glabrous; margin incurved at first, even, then somewhat striate-tuberculate when mature, thin: context reddish next to the cuticle, otherwise white, firm, becoming fragile, the taste mild and sweetish; lamellae white at first, becoming pale-yellow, the edges sometimes red, mostly equal, many forking next to the stipe, venose-connected, acute at the inner ends, rounded at the outer ends, close, broad; stipe tinged more or less with red, sometimes nearly white, equal or tapering upward, firm, then spongy, 5–9 cm. long, 1.5–2.5 cm. thick: spores pale-yellow, elliptic, strongly echinulate, 8–9 × 10.5–12 μ.

TYPE LOCALITY: New York.
HABITAT: In moist woods of spruce, fir, hemlock, maple, and yellow birch.
DISTRIBUTION: New England and New York.

92. **Russula maxima** Burlingham, sp. nov.

Pileus convex to expanded, depressed in the center when mature, up to 22 cm. broad: surface smooth, viscid when wet, with pellicle separable in part, dark-purple, almost black on the disk, glabrous; margin even: context white, mild, without special odor; lamellae white, becoming pale-yellow, sinuate, close, broad, densely pruinose; stipe rose-colored, equal, solid, 10 cm. long, 2.5–3 cm. thick: spores cream-colored in mass, broadly elliptic, echinulate, 7–8.5 × 8.7–10.5 μ.

Type collected on the ground under evergreen and deciduous trees at Tacoma, Washington, October 26, 1911, *W. A. Murrill 721* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Washington.

93. **Russula pusilla** Peck, Ann. Rep. N. Y. State Mus. **50**: 99. 1897.

Pileus very thin, nearly plane or slightly umbilicate in the center, 2–4 cm. broad; surface red, sometimes darker in the center, viscid when wet, with separable cuticle, glabrous; margin slightly striate: context white, mild, edible; lamellae white, becoming yellowish-

ochraceous with age or in drying, equal, not forking, adnate or slightly rounded behind, subventricose, subdistant, broad; stipe white, solid or spongy within, 1.7–2.5 cm. long, 4–6 mm. thick: spores yellowish, globose, slightly echinulate, 7 × 8.5 μ.

TYPE LOCALITY: Suffolk County, New York.
HABITAT: Naked ground under pines in woods.
DISTRIBUTION: New York, New Jersey, and Missouri.
ILLUSTRATIONS: Bull. N. Y. State Mus. 122: *pl. 110, f. 7–14.*

94. **Russula puellaris** Fries, Epicr. Myc. 363. 1838.

Russulina puellaris Schröt. Krypt.-Fl. Schles. 3[1]: 551. 1889.

Pileus thin, convex, becoming plane or slightly depressed in the center, 2–4 cm. broad; surface slate-violet to livid-umber, sometimes yellowish, the center darker livid or brown, deep-purple in a variety with center almost black, viscid when wet, with separable pellicle, glabrous; margin striate-tuberculate: context tinged like the surface next to the pellicle, otherwise white, mild, without special odor; lamellae white, becoming pale-yellow, equal, narrowed toward the stipe, adnate, close; stipe white or with yellowish stains, especially when old, fragile, stuffed, becoming hollow, 2–4 cm. long, 0.8–1 cm. thick, tapering upward; spores pale-yellow, subglobose, echinulate, 6–8 μ in diameter.

TYPE LOCALITY: Europe.
HABITAT: On the ground in moist places in mixed or coniferous woods.
DISTRIBUTION: From Maine and Connecticut west to Ohio; also in Europe.
ILLUSTRATIONS: Bres. Fungi Trid. *pl. 64;* Cooke, Brit. Fungi *pl. 1065;* Ricken, Blätterp. Deutschl. *pl. 17, f. 2.*

95. **Russula humidicola** Burlingham, sp. nov.

Pileus broadly convex, soon becoming depressed in the center, up to 6 cm. broad; surface varying in color from salmon, reddish-salmon, and yellowish-salmon, to Morocco-red in the center, sometimes fading, viscid, with pellicle separable except on the disk, glabrous; margin drooping, soon tuberculate-striate: context thin, white, fragile, mild, without characteristic odor; lamellae white, becoming cream-colored, equal, rarely forking next to the stipe, interveined, acute, narrow and nearly free at the inner ends, broad and rounded at the outer, close, thin, pruinose; stipe white, nearly equal, spongy, then hollow, 3–5 cm. long, 5–10 mm. thick: spores maize-yellow, globose to elliptic, 5–6 × 7 μ.

Type collected under oak trees and various shrubs in thoroughly moist soil at Cold Spring Harbor, Long Island, New York, July 23, 1912, *Gertrude S. Burlingham 20–1912* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

96. **Russula sphagnophila** C. H. Kauffman, Rep. Mich. Acad. Sci. 11: 86. 1909.

Pileus convex, umbonate, at length depressed in the center, up to 4.5 cm. broad; surface purplish-red or rosy-red on the disk surrounded with olive-brown, pale-olive-brown on the margin, viscid when wet, glabrous; margin slightly striate: context red next to the surface, otherwise white, mild, without special odor; lamellae white, then pale-ochraceous, forked here and there, narrowed toward both ends, adnate-decurrent, narrow, rather close; stipe rose-colored, usually ventricose, spongy-stuffed, then hollow, rivulose, uneven, very fragile, 4–5 cm. long, 0.7–1.2 cm. thick: spores cream-colored, globose, echinulate, 6–7 μ in diameter.

TYPE LOCALITY: Cold Spring Harbor, Long Island, New York.
HABITAT: On sphagnum in swamps.
DISTRIBUTION: Known only from the type locality.

97. **Russula Blackfordae** Peck, Bull. N. Y. State Mus. 139: 43. 1910.

Pileus fleshy, thin, broadly convex or nearly plane, about 2.5 cm. broad; surface whitish or pale-gray on the margin and brown in the center, viscid when moist, the pellicle separable; margin striate: context white, taste mild; lamellae pale-yellow or cream-colored, equal, not

forking, adnate, thin, close, narrow; stipe white, equal, glabrous, stuffed to hollow, 2.5 cm. long, 4–6 mm. thick: spores pale-yellow, globose, slightly echinulate, 8–9 μ in diameter.

TYPE LOCALITY: Ellis, Massachusetts.
DISTRIBUTION: Massachusetts and Vermont.
ILLUSTRATIONS: Bull. N. Y. State Mus. 139: *pl. Z, f. 9–13.*

XXIII. **Alutaceae.** Pileus with separable pellicle; surface viscid when wet, some shade of red but variable in color; margin becoming striate: context white, unchanging, mild; lamellae yellowish at first, becoming deep-yellow, equal, not forking: spores ochraceous.

98. **Russula alutacea** (Pers.) Fries, Epicr. Myc. 362. 1838.

Agaricus alutaceus Pers. Syn. Fung. 441. 1801.
Russulina alutacea Schröt. Krypt.-Fl. Schles. **3**[1]: 552. 1889.

Pileus fleshy, convex, expanding and becoming subumbilicate, 8–15 cm. broad; surface dull-red or dark-reddish-purple, fading especially on the disk, greenish shades often appearing with the fading, the pellicle separable, viscid when wet, glabrous; margin even at first, somewhat striate-tuberculate with age: context white, rather firm, mild, without special odor; lamellae pale-yellow at first, becoming deeper yellow or alutaceous with age, equal, simple, rather broad, subdistant, not pruinose, nearly free; stipe white, often tinged with red or purple-red, equal, solid, up to 10 cm. long, 1–3 cm. thick: spores ochraceous, broadly elliptic, echinulate, 7–8.7 × 8.7–10.5 μ.

TYPE LOCALITY: Europe.
HABITAT: In oak, maple, or mixed woods.
DISTRIBUTION: New England to North Carolina and west to Michigan and Colorado; also in Europe.
ILLUSTRATIONS: Atk. Stud. Am. Fungi *pl. 36, f. 2;* Cooke, Brit. Fungi *pl. 1096, 1097;* Gill. Champ. Fr. *pl. 196 (597)*; Hard, Mushrooms *f. 148.*
EXSICCATI: Herpell, Präp. Hutpilze *51;* Rav. Fungi Car. **2**: *6;* Sydow, Myc. Mar. *604;* Thüm. Fungi Austr. *912.*

99. **Russula chamaeleontina** Fries, Epicr. Myc. 363. 1838.

Pileus fragile, thin, plane or depressed, up to 5 cm. broad; surface varying from rose-red to purple and lilac, the disk or entire surface becoming yellow or at times yellow from the first, viscid, with thin, separable pellicle, glabrous; margin even, then somewhat striate: context white, mild; lamellae yellow, equal, adnexed or free, narrow; stipe white, spongy-stuffed, becoming hollow, striate, 2–5 cm. long, 0.4–1 cm. thick: spores subglobose, ochraceous, echinulate, 7 × 7–8.7 μ.

TYPE LOCALITY: Europe.
HABITAT: In mixed woods or pines.
DISTRIBUTION: Vermont to Michigan and Colorado, and south to the District of Columbia; also in Europe.
ILLUSTRATIONS: Britz. Hymen. Südb. Russ. *f. 95;* Cooke, Brit. Fungi *pl. 1098;* Ricken, Blätterp. Deutschl. *pl. 18, f. 2.*

100. **Russula abietina** Peck, Ann. Rep. N. Y. State Mus. **54**: 180. 1901.

Pileus fleshy, convex, becoming plane or slightly depressed in the center, 2.5–6.5 cm. broad; surface vinous-purple, greenish-purple, or olive-green, with brown, blackish, or greenish center, covered with a viscid, separable pellicle, glabrous; margin tuberculate-striate: context fragile, thin, white, mild; lamellae whitish, becoming pale-yellow, equal, not forking, subdistant, broad and rounded at the outer ends, narrowed and nearly free at the inner, ventricose; stipe white, equal or tapering upward, glabrous, stuffed or hollow, 2.5–6.5 cm. long, 0.5–1 cm. thick: spores bright-yellowish-ochraceous, subglobose, echinulate, 7.5–10 μ in diameter.

TYPE LOCALITY: New York.
HABITAT: Under balsam fir trees.
DISTRIBUTION: New England and New York to Michigan, Colorado, and Washington.
ILLUSTRATIONS: Ann. Rep. N. Y. State Mus. **54**: *pl. 7, f. 1–11.*

101. **Russula Turci** Bres. Fungi Trid. 1: 22. 1882.

Pileus fleshy, thin, from convex to depressed, gregarious, up to 9 cm. broad; surface reddish-violaceous or lilac-purple, darker in the center, sometimes becoming yellowish in age, viscid when wet, slightly areolate when old; margin even, then striate: context white, mild, without special odor; lamellae pallid, soon becoming ochraceous, equal, venose-connected, rounded and free behind, somewhat crowded; stipe white, subrugulose, tapering downward, soon with hollow spaces within, 3–5 cm. long, up to 1 cm. thick: spores ochraceous, globose, echinulate, 8–9 μ in diameter; cystidia fusoid, 60–70 $\times$ 10 μ.

TYPE LOCALITY: Italy.
HABITAT: In coniferous woods.
DISTRIBUTION: From Maine to Vermont and New York, and in Washington; also in Europe.
ILLUSTRATION: Bres. Fungi Trid. *pl. 26*.

102. **Russula nauseosa** (Pers.) Fries, Epicr. Myc. 363. 1838.

Agaricus nauseosus Pers. Syn. Fung. 446. 1801.
Russulina nauseosa Schröt. Krypt.-Fl. Schles. 3[1]: 562. 1889.

Pileus broadly convex, becoming plane to depressed, up to 5 cm. broad; surface purple-brown at the center, shading to garnet-brown or dull-garnet toward the margin, sometimes becoming pale, viscid when wet, with the pellicle separable, glabrous; margin becoming tuberculate-striate or furrowed: context white, fragile, mild but somewhat nauseous, the odor disagreeable with age; lamellae light-yellow, then dingy-ochraceous, with a few shorter ones intermingled here and there, adnexed, ventricose, somewhat distant; stipe white, up to 2.5 cm. long, about 0.8 cm. thick; spores yellow, 8–9 μ in diameter.

TYPE LOCALITY: Europe.
HABITAT: On the ground in woods.
DISTRIBUTION: North Carolina and Vermont; also in Europe.
ILLUSTRATIONS: Bres. Fungi Trid. *pl. 129;* Lucand, Champ. Fr. *pl. 196*.

XXIV. **Purpurinae.** Pileus with separable pellicle; surface red or violet-purple, or white mixed with red, viscid when wet, glabrous; margin even at first, sometimes becoming somewhat striate: context white, unchanging, mild, without special odor; lamellae white, equal, simple or with some forking: spores white.

103. **Russula purpurina** Quél. & Schulzer; Schulzer, Hedwigia **24**: 139. 1885.

Pileus subglobose, becoming plane or slightly depressed in the center, 4–7 cm. broad; surface old-blood-red to carmine-lake and rosy-pink, sometimes paler in places, viscid when wet, with separable pellicle, glabrous but appearing more or less pruinose when dry; margin even, when mature more or less obscurely striate-tuberculate, thin, sometimes upturned: context fragile, reddish under the pellicle, otherwise white, mild; lamellae white, becoming yellowish in age or in drying, sometimes pink on the edges, which are often floccose and crenulate, mostly equal, not forking, acute at the inner ends, broad toward the outer, rather close; stipe colored like the pileus or paler, often white at the apex and base, equal, sometimes tapering upward or downward, stuffed, spongy within, 2–7 cm. long, 1–2 cm. thick: spores white, globose to subellipsoid, minutely verrucose, 4–8 μ long.

TYPE LOCALITY: Slavonia.
HABITAT: In coniferous or mixed woods.
DISTRIBUTION: From Vermont to Long Island and west to Michigan; also in Europe.

104. **Russula uncialis** Peck, Bull. N. Y. State Mus. 1[2]: 10. 1888.

Pileus thin, convex, becoming plane or slightly depressed in the center, 2–6 cm. broad; surface old-blood-red to reddish-old-rose, often darker in the center, viscid when moist, with separable cuticle except on the disk, wholly or partly pruinose or pruinose-granular when dry; margin even when young, becoming slightly striate-tuberculate: context reddish next to the cuticle, elsewhere white, the taste mild; lamellae white, cream-colored in drying, equal, some forking near the stipe, venose-connected, acute at the inner ends and somewhat adnate, broader

at the outer ends, even on the edges, rather close; stipe white or often stained more or less with red, equal to slightly tapering upward, glabrous, stuffed or spongy, 4–6 cm. long, 0.5–1 cm. thick: spores white, globose, echinulate, 7–8.5 μ in diameter.

TYPE LOCALITY: Sandlake, New York.
HABITAT: On the ground in deciduous or mixed woods.
DISTRIBUTION: Eastern United States as far south as Alabama.
ILLUSTRATIONS: Bull. N. Y. State Mus. 116: *pl. 107, f. 7–12;* Mycologia 4: *pl. 76, f. 6.*

105. **Russula sericeonitens** C. H. Kauffman, Rep. Mich. Acad. Sci. 11: 84. 1909.

Pileus convex, becoming plane or slightly depressed in the center, rather thin, 4–9 cm. broad; surface dark-violet-purple or purplish-red, blackish-livid toward the center, viscid when moist, the pellicle separable, with a silky-sheen, margin even: context purplish next to the cuticle, otherwise white, unchanging, taste mild, odor none; lamellae white, slightly yellowish with age or in drying, equal, some forking near the stipe and occasionally part way to the margin, narrow at the inner ends, broad at the outer, rather broad, subcrowded; stipe white, equal or thickened at the apex, firm, then spongy, glabrous, even or obscurely rivulose, 3–7 cm. long, 1–1.3 cm. thick: spores white, globose, echinulate, 6–7 μ in diameter.

TYPE LOCALITY: Michigan.
HABITAT: In mixed woods of hemlock, maple, and yellow birch or oak.
DISTRIBUTION: Michigan, Vermont, and New York.
ILLUSTRATION: Mycologia 4: *pl. 76, f. 1.*

106. **Russula brunneola** Burlingham, sp. nov.

Pileus convex-umbilicate, then plane to depressed, up to 10 cm. broad; surface varying from Vandyke-brown to brownish-drab or burnt-umber, sometimes tinged with vinous-purple, rarely with olive-brown, paler when mature, viscid when moist, the cuticle separable on the margin, pruinose when young, glabrous; margin involute, soon striate-tuberculate: context rather firm, tinged with brownish or slate-violet under the cuticle, otherwise white, mild, the odor none; lamellae white, becoming yellowish in drying, the edges sometimes tinged with Vandyke-brown, pruinose, forking near the stipe or a little distance away, venose-connected, equal, acute at the inner ends, rounded at the outer, close, rather broad; stipe white or tinged with slate-violet, nearly equal, glabrous, spongy, 4–6 cm. long, 1.5–2 cm. thick: spores white, globose to elliptic, very minutely echinulate, 5–6 $\times$ 6–8 μ.

Type collected among spruce needles near a wood road under spruces and yellow birch saplings at Stratton, Vermont, August 7, 1911, *Gertrude S. Burlingham 99–1911* (herb. Burlingham).
DISTRIBUTION: Vermont, New Hampshire, and Massachusetts.

107. **Russula albella** Peck, Ann. Rep. N. Y. State Mus. **50**: 101. 1897.

Pileus fleshy, thin, plane or slightly depressed in the center, 5–7.5 cm. broad; surface white or whitish, sometimes tinged with pink or rose-red, especially on the margin, dry, glabrous; margin even or at length slightly striate: context white, taste mild; lamellae white, equal, close, thin; stipe white, equal, solid to spongy, 2.5–5 cm. long, 6–8 mm. thick: spores white, globose, 8 μ in diameter.

TYPE LOCALITY: Suffolk County, New York.
HABITAT: Dry soil in woods.
DISTRIBUTION: New York and Mississippi.

XXV. **Fragiles.** Pileus fragile, with separable pellicle; surface red or white, viscid when wet, glabrous; margin striate: context white, unchanging, acrid, without special odor; lamellae equal, simple: spores white.

108. **Russula subfragilis** Burlingham.

Agaricus niveus Pers. Syn. Fung. 438. 1801. Not *A. niveus* Scop. 1772.
Agaricus fragilis Pers. Syn. Fung. 440. 1801. Not *A. fragilis* Schaeff. 1774.
Russula fragilis Fries, Epicr. Myc. 359. 1838.

Pileus thin, convex, then becoming plane to depressed, 2.5–6 cm. broad; surface pale-red or rosy, sometimes white from the first and sometimes fading to white, viscid when moist, polished, with separable pellicle, glabrous; margin thin, striate-tuberculate: context white, not red next to the pellicle, fragile, very acrid, without special odor; lamellae pure-white, equal, adnexed, ventricose, thin, close, sometimes uneven on the edges, stipe white, equal, spongy within, then hollow, 2–4 cm. long, 0.5–1 cm. thick: spores white, subglobose, echinulate, 8 × 8–10 μ.

TYPE LOCALITY: Europe.
HABITAT: On the ground in woods.
DISTRIBUTION: From Maine to Alabama and in the central United States; also in Europe.
ILLUSTRATIONS: Barla, Champ. Nice *pl. 14, f. 10–12;* Bull. Herb. Fr. *pl. 509, f. T–U;* Cooke, Brit. Fungi *pl. 1091;* Gill. Champ. Fr. *pl. 189 (613);* Lanzi, Funghi Mang. *pl. 47, f. 2;* Ricken, Blätterp. Deutschl. *pl. 19, f. 3.*

109. **Russula emetica** (Schaeff.) Pers. Obs. Myc. **1**: 100. 1796.

Agaricus emeticus Schaeff. Fung. Bavar. **4**: Ind. 9. 1774.
Agaricus sylvaticus Lam. Fl. Fr. **1**: 106. 1778.
Amanita rubra Lam. Encyc. **1**: 105. 1783.

Pileus fleshy, convex to plane or depressed, 5–10 cm. broad; surface rosy, soon blood-red, then fulvous or sometimes ochroleucous or entirely white, viscid when wet, shining, with separable pellicle, glabrous; margin striate-tuberculate to sulcate: context red next to the pellicle, otherwise white, acrid, without special odor; lamellae pure-white, equal, free or slightly adnexed, broad, subdistant; stipe white or reddish, subequal, spongy to solid, firm, elastic, even, 4–8 cm. long, 1–2 cm. thick: spores globose, echinulate, 8–10 μ in diameter.

TYPE LOCALITY: Bavaria.
HABITAT: On the ground in woods or on rotten logs.
ILLUSTRATIONS: Atk. Stud. Am. Fungi *pl. 40, f. 4;* Fries, Sv. Aetl. Svamp. *pl. 21;* Barla, Champ. Nice *pl. 14, f. 4–9;* Bel, Champ. Tarn *pl. 25;* Bernard, Champ. Roch. *pl. 40, f. 3;* Boyer, Champ. Comest. *pl. 34;* Bres. Fung. Trid. *pl. 73;* Cooke, Brit. Fungi *pl. 1030;* Dufour, Atl. Champ. *pl. 28, no. 63;* Gill. Champ. Fr. *pl. 188 (610);* Leuba, Champ. Comest. *pl. 26, f. 5–7;* Mycologia **4**: *pl. 76, f. 3;* Richon & Roze, Atl. Champ. *pl. 48, f. 1–3;* Roques, Hist. Champ. *pl. 11, f. 1–2;* Schaeff. Fung. Bavar. *pl. 15, f. 4–6;* Rep. Sec. Agr. U. S. **1890**: Microsc. *pl. 2, f. 2.*
DISTRIBUTION: Eastern and central United States, Colorado, and the Pacific coast; also in Europe.
EXSICCATI: Clements, Crypt. Form. Colo. *183* (in part); Herpell, Präp. Hutpilze *14.*

110. **Russula rugulosa** Peck, Ann. Rep. N. Y. State Mus. **54**: 179. 1901.

Pileus thin, fragile, convex, then almost plane or depressed in the center, 5–10 cm. broad; surface varying in color from yellowish-red to deep-red, viscid, then rugose-tuberculate, with wrinkles sometimes radiating from the center; margin even, then tuberculate-striate: context white, acrid or tardily acrid; lamellae white, equal, adnate or slightly rounded behind, rather close; stipe white, nearly equal, spongy within, 5–8 cm. long, 8–16 mm. thick: spores white, subglobose or broadly elliptic, echinulate, 8.5 × 9.5 μ.

TYPE LOCALITY: Adirondack Mountains, New York.
HABITAT: Among mosses and fallen leaves in woods.
DISTRIBUTION: New York, Vermont, and Connecticut.
ILLUSTRATIONS: Ann. Rep. N. Y. State Mus. **54**: *pl. 72, f. 12–18.*

111. **Russula bicolor** Burl. Mycologia **5**: 311. 1913.

Pileus broadly convex, soon nearly plane, up to 8 cm. broad; surface coppery-red intermixed with pale-yellow or ocher, viscid when moist, pellicle separable on the margin, glabrous; margin even, becoming striate when mature: context white, subfragile, acrid; lamellae white, drying yellowish, equal, broad at the outer ends, narrowed behind but not free, interveined, subcrowded; stipe white, spongy, becoming hollow, 4.5 cm. long, 1.5 cm. thick or smaller: spores white, subglobose, echinulate, 8 × 8–10 μ.

TYPE LOCALITY: Newfane, Vermont, 342 m. elevation.
HABITAT: On the ground in mixed woods under yellow birch.
DISTRIBUTION: Vermont and Oregon.

112. **Russula nigrodisca** Peck; J. M. Macoun, in D. S. Jordan, Fur Seals N. Pacif. **3**: 583. 1899.

Pileus convex or nearly plane, 2.5 to 4 cm. broad; surface dull-dark-red near the margin, nearly black on the disk, viscid when young and moist, glabrous, margin even: context similar to that of *Russula subfragilis*, taste not recorded in the type description: lamellae whitish, entire, subdistant, narrowed toward the stipe, thin; stipe white, nearly equal, 2.5 to 4 cm. long, 4 to 8 mm. thick: spores white, subglobose, finely echinulate, 7.5 × 9.5–11.5 μ.

TYPE LOCALITY: St. Paul Island, Bering Sea.
HABITAT: On exposed hillsides among cladonias and other lichens.
DISTRIBUTION: Vermont, Colorado, and St. Paul Island.

113. **Russula fallax** Fries, Obs. Myc. **1**: 70. 1815.

Pileus thin, fragile, convex, becoming plane or slightly depressed in the center, 3–5 cm. broad; surface vinous-purple in the center, incarnate or Indian-lake on the margin, more or less olivaceous surrounding the center or even in the center, viscid when moist, with separable pellicle, glabrous, margin striate: context white, sometimes tinged like the surface beneath the pellicle, acrid, without special odor; lamellae white, equal, adnexed, distant to subcrowded; stipe white, nearly equal, spongy within, 3–5 cm. long, 0.6–1 cm. thick: spores white, subglobose, minutely echinulate, 6 × 6–7 μ.

TYPE LOCALITY: Europe.
HABITAT: In moist places in woods, often in sphagnum moss.
DISTRIBUTION: Vermont to Michigan and Colorado; also in Europe.
ILLUSTRATIONS: Cooke, Brit. Fungi *pl. 1059;* Schaeff. Fung. Bavar. *pl. 16, f. 1–3* (as *Agaricus emeticus*).

114. **Russula parvula** Burlingham, sp. nov.

Pileus broadly convex, becoming plane, up to 4 cm. broad; surface very dark violet, almost black in the center and black all over when young, becoming paler and brighter colored on the margin, viscid when wet, with separable pellicle, pruinose when young, then polished; margin scarcely striate: context fragile, tinged reddish under the pellicle, otherwise white, slowly acrid; lamellae white, yellowish in drying, dusted with the white spores, equal, simple, venose-connected, slightly adnate, close; stipe white, staining sordid-violaceous or dull-red where handled or bruised, spongy within, 2.5–4 cm. long, 1 cm. or less thick: spores white, globose, echinulate, 7 μ in diameter.

Type collected in needle soil in spruce woods at Stratton, Vermont, August 23, 1910, *Gertrude S. Burlingham 202–1910* (herb. Burlingham).
DISTRIBUTION: Known only from the type locality.

115. **Russula crenulata** Burl. Mycologia 5: 310. 1913.

Pileus broadly convex, then plane to depressed, up to 9 cm. broad; surface milk-white or slightly yellow, viscid when moist, with pellicle easily separable, glabrous; margin thin, slightly striate-tuberculate with age: context fragile, white, very acrid; lamellae white, equal, not forking, edges appearing under the lens finely notched or crenate, rounded at the outer ends, narrowed behind, close, pruinose; stipe white, spongy, nearly equal or enlarged below, glabrous, spongy within, 10 cm. long, 2 cm. thick: spores white, mostly globose, echinulate, 10 μ in diameter.

TYPE LOCALITY: Glen Brook, Oregon.
HABITAT: In a dense fir forest with a few oaks.
DISTRIBUTION: Known only from the type locality.

DOUBTFUL AND EXCLUDED SPECIES

Russula amoena Quél. Assoc. Fr. Av. Sci. Compte Rendu **9**: 668. 1881. Reported from Wisconsin by Denniston in Trans. Wis. Acad. **15**: 76. 1904.

Russula aurata (With.) Fries, Epicr. Myc. 360. 1838. Reported from Connecticut by White, and from West Virginia and Pennsylvania by McIlvaine. Specimens for verifying these reports are not available. It is described in McIlv. Am. Fungi 206. 1900.

Russula citrina Gill. Rev. Myc. **3**[9]: 5. 1881. Reported from Connecticut by White; also reported by McIlvaine. The specimens of this are not available for verification. It is described in McIlv. Am. Fungi 203. 1900.

Russula cutefracta Cooke, Grevillea **10**: 46. 1881. Reported from New York by Peck. The specimens so determined seem to be *R. variata* Banning & Peck, which sometimes occurs with the surface cracking into areolae.

Russula depallens (Pers.) Fries, Epicr. Myc. 353. 1838. Reported from Connecticut by White, and from Pennsylvania by McIlvaine. It is described in McIlv. Am. Fungi 192. 1900.

Russula drimeja Cooke, Grevillea **10**: 46. 1881. Reported from Washington by Burlingham. The specimens so determined seem upon further comparison to be *R. Queletii*. The spore-color was not given in the field notes, and the determination as to whether the specimens represent *R. drimeja* or *R. Queletii* depends upon the color of the lamellae, which seems to place the plants rather with *R. Queletii*. They certainly do not represent *R. expallens* Gill.

Russula elegans Bres. Fungi Trid. **1**: 21. 1882. Reported from West Virginia and Pennsylvania by McIlvaine. It is described in McIlv. Am. Fungi 200. 1900.

Russula lilacea Quél. Bull. Soc. Bot. Fr. **23**: 330. 1876. Reported from Michigan by Kauffman. Specimens thus determined which I have seen proved to be *R. Mariae* Peck.

Russula Linnaei Fries, Epicr. Myc. 358. 1838. Reported from West Virginia and Pennsylvania by McIlvaine. A description is given in McIlv. Am. Fungi 196. 1900.

Russula nitida (Pers.) Fries, Epicr. Myc. 361. 1838. Reported by Frost in the "Catalogue of Plants Growing without Cultivation within Thirty Miles of Amherst College."

Russula ochracea (Alb. & Schw.) Fries, Epicr. Myc. 363. 1838. Reported from California by Harkness and Moore, from North Carolina by Curtis, from Massachusetts by the Boston Mycological Club, and from Wisconsin by Denniston. I have not seen the specimens from which these determinations were made.

Russula olivacea (Schaeff.) Fries, Epicr. Myc. 356. 1838. Reported from Pennsylvania by McIlvaine. It is described in McIlv. Am. Fungi 197. 1900.

Russula pulchralis Britz. Jahresb. Nat. Ver. Augsburg **28**: 140. 1885. Reported from Maine by Miss White, but her specimens do not seem to have been preserved.

Russula punctata Gill. Tabl. Anal. 48. 1884. Reported from Massachusetts by the Boston Mycological Club. The specimens thus determined are *R. Mariae* Peck. Maire considers *R. punctata* to be the same as *Russula amoena* Quél. It is described in McIlv. Am. Fungi 204. 1900.

Russula sororia Fries, Epicr. Myc. 359. 1838. Specimens referred to this species from New York by Peck and from Michigan by Kauffman are undoubtedly *R. pectinata*. The specimens which Boudier refers to *R. sororia* Fries in Ic. Myc. **1**: 23. 1911, and figures in his *plate 45*, seem also to be *R. pectinata*.

Russula vesca Fries, Epicr. Myc. 352. 1838. The specimens reported from New York by Peck are undoubtedly *R. variata* Banning & Peck. Kauffman has reported some doubtful collections in Michigan. It is described by Kauffman in Rep. Mich. Acad. Sci. **11**: 74. 1909; also in McIlv. Am. Fungi 198. 1902.

Russula viridipes Banning & Peck; Peck, Ann. Rep. N. Y. State Mus. **44**: 184. 1891. There seem to be no specimens of this species preserved. Colored drawings of it appear in Miss Banning's notes which are deposited in the herbarium at Albany. The color of the spores is not mentioned in the description. Since there are no type specimens and no further collections have been made, it seems best to leave this in doubt.

Russula vitellina (Pers.) Fries, Epicr. Myc. 363. 1838. Reported from West Virginia, Pennsylvania, and New Jersey by McIlvaine. A description is found in McIlv. Am. Fungi 212. 1900.

Tribe **3. AGARICEAE.*** Hymenophore annual, putrescent or reviving, stipitate or sessile, terrestrial or epixylous, rarely parasitic on other fungi: context composed of slender, elongate cells, fleshy or membranous, sometimes rather tough; hymenium lamellate, fleshy or tough: spores variously colored: veil present or wanting: volva present or wanting.

Spores white in mass, rarely tinged or becoming tinged with yellow, green, violet, or brown. — Subtribe 1. LEPIOTANAE.
Spores rosy or rosy-ochraceous in mass. — Subtribe 2. PLUTEANAE.
Spores ochraceous, ferruginous, or fulvous in mass. — Subtribe 3. PHOLIOTANAE.
Spores brown, purplish-brown, or black in mass. — Subtribe 4. AGARICANAE.

Subtribe 1. LEPIOTANAE

Hymenophore tough to woody, reviving.
  Lamellae split longitudinally. — 12. SCHIZOPHYLLUS.
  Lamellae not split longitudinally.
    Stipe lateral or wanting, or at times very eccentric; pileus irregular.
      Veil absent.
        Pileus sessile, resupinate when young.
          Context homogeneous.
            Pileus membranous. — 13. PLEUROTOPSIS.
            Pileus coriaceous. — 14. SCYTINOTUS.
          Context with the upper layer gelatinous. — 15. RESUPINATUS.
        Pileus stipitate or dimidiate, not resupinate when young.
          Pileus membranous; stipe tubular. — 16. MARASMIELLUS.
          Pileus fleshy-tough to coriaceous; stipe when present solid. — 17. PANELLUS.
      Veil present, soon vanishing; pileus sessile. — 18. TECTELLA.
    Stipe central or slightly eccentric, varying in a few species to strongly eccentric or even lateral; pileus usually regular.
      Stipe tubular, slender, with cartilaginous cortex.
        Pileus subgelatinous; stipe horny. — 19. HELIOMYCES.
        Pileus membranous or somewhat fleshy.
          Pileus glabrous or nearly so.
            Stipe simple. — 20. MARASMIUS.
            Stipe compound. — 21. POLYMARASMIUS.
          Pileus conspicuously hairy. — 22. CRINIPELLIS.
      Stipe solid, thick, of uniform texture.
        Veil absent.
          Hymenophore solitary or gregarious, rarely cespitose; pileus usually regular.
            Pileus thin, umbilicate or infundibuliform; lamellae decurrent. — 23. LENTINUS.
            Pileus thick, convex; lamellae adnate. — 24. LENTINULA.
          Hymenophore cespitose; pileus somewhat irregular. — 25. LENTINELLUS.
        Veil present, though often evanescent.
          Hymenophore solitary to gregarious, slightly cespitose at times; surface scaly. — 26. LENTODIUM.
          Hymenophore densely cespitose; surface smooth. — 27. LENTODIELLUM.

Hymenophore fleshy or membranous, not reviving. (See page 297.)

12. SCHIZOPHYLLUS Fries, Obs. Myc. 1: 103. 1815.

Apus S. F. Gray, Nat. Arr. Brit. Pl. 1: 617. 1821.

Pileus coriaceous, reviving, dimidiate; lamellae densely hirsute, the edges splitting longitudinally and the parts becoming revolute: spores hyaline: stipe none, veil none.

Type species, *Agaricus alneus* L.

1. **Schizophyllus alneus** (L.) Schröt. Krypt.-Fl. Schles. 3[1]: 553. 1889.

Agaricus alneus L. Sp. Pl. 1176. 1753.
Agaricus multifidus Batsch, Elench. Fung. 173. 1783.
Agaricus radiatus Sw. Prodr. 148. 1788.
Schizophyllus communis Fries, Obs. Myc. 1: 103. 1815.
Schizophyllus umbrinus Berk. Jour. Bot. & Kew Misc. 3: 15. 1851.
Schizophyllus fasciatus Pat. Jour. de Bot. 1: 170. 1887.
Schizophyllus mexicanus Pat. Jour. de Bot. 1: 171. 1887.
Schizophyllus Murrayi Massee, Jour. Bot. 30: 164. 1892.
Schizophyllus Egelingianus Ellis & Ev. Bull. Torrey Club 22: 439. 1895.
Hyponevris alneus Earle, Bull. N. Y. Bot. Gard. 5: 412. 1909.

*By WILLIAM ALPHONSO MURRILL.

Pileus thin, soft, coriaceous, sessile, suborbicular to flabelliform, convex to depressed, 1.5–4 cm. broad; surface whitish-villose to hirsute, at times scurfy-incrusted and subglabrous, white to dull-ochraceous or umbrinous, margin radiate-sulcate, subentire to lobed, incised, or multifid; lamellae radiating, narrow, inserted, bifid, the edges revolute, villose, gray to purplish-brown: spores cylindric, smooth, hyaline, 6–7×2–2.5 μ.

TYPE LOCALITY: Sweden.
HABITAT: Dead wood.
DISTRIBUTION: Cosmopolitan.
ILLUSTRATIONS: Atk. Stud. Am. Fungi *f. 130;* Sow. Engl. Fungi *pl. 183;* Jour. Bot. **30**: *pl. 322, f. 13, 14;* Batsch, Elench. Fung. *f. 126;* Jour. Bot. & Kew Misc. **3**: *pl. 1, f. 1.*
EXSICCATI: Ellis, N. Am. Fungi *404;* Rav. Fungi Car. 1: *6;* Rav. Fungi Am. *206, 786;* Underw. & Cook, Illust. Fungi *9;* Thüm. Myc. Univ. *304b;* Rab.-Wint. Fungi Eur. *3646;* Shear, N. Y. Fungi *24.*

13. PLEUROTOPSIS (P. Henn.) Earle, Bull. N. Y. Bot. Gard. 5: 412. 1909.

Marasmius § *Pleurotopsis* P. Henn. in E. & P. Nat. Pfl. 1[1]**: 226. 1898.

Pileus thin, membranous, reviving, sessile, resupinate when young; lamellae radiating from a central or eccentric point: spores hyaline: veil none.

Type species, *Marasmius spodoleucus* Berk.

Pileus white or whitish.
  Pileus 2 mm. broad; surface pruinose to glabrous.
    Hymenophore borne on an arachnoid mycelium. 1. *P. arachnoidea.*
    Hymenophore not borne as above. 2. *P. calospora.*
  Pileus 2 mm. broad; surface floccose. 3. *P. niduliformis.*
  Pileus 2–6 mm. broad; surface pruinose-floccose. 4. *P. liliputiana.*
Pileus pale-brownish, 5–10 mm. broad, decorated with long fibers. 5. *P. asperifolia.*

1. Pleurotopsis arachnoidea (Berk. & Curt.) Murrill.

Marasmius arachnoideus Berk. & Curt. Jour. Linn. Soc. **10**: 299. 1868.

Pileus resupinate, adnate, very thin, 2 mm. broad; surface white, pruinose; lamellae few: stipe very short or obliterated, borne on an arachnoid mycelium.

TYPE LOCALITY: Cuba.
HABITAT: On dead wood.
DISTRIBUTION: Known only from the type locality.

2. Pleurotopsis calospora (Pat.) Murrill.

Crinipellis calosporus Pat.; Duss, Énum. Champ. Guad. 44. 1903.

Pileus resupinate, becoming dimidiate, thin, membranous, 2 mm. broad; surface white, glabrescent, the cuticle consisting of elongate, tough, thick-walled cells 4–5 μ in diameter, margin smooth or sulcate: lamellae radiating from an eccentric point, distant, 5–7 in number, not interveined, thin, entire, whitish-yellow: spores ovoid, smooth, hyaline tinged with rose, 10×7 μ; cystidia clavate, thick-walled, hyaline, often encrusted above, 33×10–15 μ.

TYPE LOCALITY: Bains-Jaunes, Guadeloupe.
HABITAT: On dead twigs in woods.
DISTRIBUTION: Known only from the type locality.

3. Pleurotopsis niduliformis Murrill, sp. nov.

Pileus minute, membranous, reviving, at first resupinate, becoming inverted cupuliform, sessile, vertically attached, regular, solitary to gregarious, about 2 mm. broad; surface floccose, white, smooth, margin concolorous, subentire, usually inflexed on drying: lamellae radiating from the point of attachment, rather distant, firm, narrow, undulate, white, the interspaces white, sometimes venose.

Type collected on fallen dead twigs of *Juniperus barbadensis* in Bermuda, November 29–December 14, 1912, *Brown, Britton, & Seaver 1350* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Bermuda.

4. **Pleurotopsis liliputiana** (Mont.) Murrill.

Agaricus (Pleurotus) liliputianus Mont. Ann. Sci. Nat. IV. 1: 99. 1854.
Marasmius nidulus Berk. & Curt. Jour. Linn. Soc. 10: 299. 1868.

Pileus resupinate, at first Peziza-like, becoming free on one side, 2–6 mm. broad; surface snow-white, pruinose-floccose: lamellae few, thick, plane or ventricose, interspaces smooth: stipe pruinose, very short or none, pileus often attached by the vertex.

TYPE LOCALITY: French Guiana.
HABITAT: On fallen sticks in woods.
DISTRIBUTION: Mexico, British Honduras, Cuba, and Guadeloupe; also in South America.

5. **Pleurotopsis asperifolia** (Pat.) Murrill.

Crinipellis asperifolia Pat. Jour. de Bot. 3: 336. 1889.

Pileus sessile, resupinate or reflexed, solitary to gregarious, 5–10 mm. broad; surface dry, striate entirely to the center, pale-brownish, decorated with very long, colorless, tenacious, cylindric fibers, margin thin, entire, concolorous: lamellae distant, dry, concolorous or slightly paler, attenuate at both ends, unequal, radiating from the tubercular attachment of the pileus: cystidia abundant, club-shaped, projecting, rugose at the apex from incrustations of oxalate of lime.

TYPE LOCALITY: Martinique.
HABITAT: On bark at the base of a living *Murraya exotica*.
DISTRIBUTION: Martinique and Guadeloupe.
ILLUSTRATION: Jour. de Bot. 3: *p. 337*.

14. **SCYTINOTUS** P. Karst. Bidr. Finl. Nat. Folk 32: 97. 1879.

Pileus coriaceous, of homogeneous texture, reviving, sessile, at first resupinate: lamellae radiating from a central or eccentric point, not splitting on the edges: spores hyaline: veil none.

Type species, *Scytinotus ringens* (Fries) P. Karst.

Pileus and lamellae white or yellowish.	1. *S. distantifolius*
Pileus and lamellae isabelline.	2. *S. concolor*.
Pileus and lamellae blood-red.	3. *S. haematodes*.

1. **Scytinotus distantifolius** Murrill, sp. nov.

Pileus at first resupinate, becoming sessile and conchate, slightly imbricate at times, 5–10 mm. broad; surface smooth, white, pruinose to glabrous, margin concolorous, entire to somewhat lobed, inflexed on drying: context thin, white, coriaceous; lamellae radiating from the point of attachment, very distant, somewhat venose-connected, rather broad, irregular, yellowish, the edges firm, entire.

Type collected on dead sticks at Rio Piedras, Porto Rico, May 25, 1913, *John R. Johnston 927* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Porto Rico and Vera Cruz.

2. **Scytinotus concolor** (Berk. & Curt.) Murrill.

Marasmius concolor Berk. & Curt. Jour. Linn. Soc. 10: 299. 1868.

Pileus firm, dry, irregular, helmet-shaped, sessile, gregarious, 2–8 mm. broad; surface pulverulent to glabrous, striate-furrowed when fresh, pale-avellaneous-isabelline to pale-fulvous, margin lobed, concolorous: lamellae few, broad, tough, isabelline, curved, inserted, rarely forked, not interveined, radiating from an eccentric point.

TYPE LOCALITY: Cuba.
HABITAT: On dead sticks and rarely on leaves in woods.
DISTRIBUTION: Cuba, Jamaica, and Guadeloupe.

3. **Scytinotus haematodes** (Berk. & Curt.) Murrill.

Marasmius haematodes Berk. & Curt. Jour. Linn. Soc. 10: 299. 1868.

Pileus helmet-shaped, rigid, 2 mm. broad; surface blood-red-liver-colored, glabrous: lamellae vein-like, thick, concolorous: stipe none.

TYPE LOCALITY: Cuba.
HABITAT: On dead sticks.
DISTRIBUTION: Known only from the type locality.

15. **RESUPINATUS** (Nees) S. F. Gray, Nat. Arr. Brit. Pl. 1: 617. 1821.

Agaricus § *Resupinatus* Nees, Syst. Pilze Schw. 197. 1817.

Pileus coriaceous, with a gelatinous upper stratum, reviving, sessile, at first resupinate: lamellae radiating from a central or eccentric point: spores hyaline: veil none.

Type species, *Agaricus applicatus* Batsch.

Pileus 1.5–5 cm. broad; lamellae white or yellowish.
  Surface of pileus villose-tomentose. 1. *R. atrocoeruleus.*
  Surface of pileus pruinose or fibrillose, rarely hispid.
    Temperate species. 2. *R. griseus.*
    Tropical species.
      Surface of pileus entirely white; lamellae crowded. 3. *R. cubensis.*
      Surface of pileus grayish or fumosous; lamellae distant. 4. *R. subbarbatulus.*
Pileus 2–16 mm. broad.
  Lamellae white or whitish; pileus campanulate, black or blackish.
    Pileus 2–4 mm. broad. 5. *R. campanulatus.*
    Pileus 4–7 mm. broad. 6. *R. orizabensis.*
  Lamellae creamy-yellow; pileus 6–12 mm. broad; surface pallid to brownish, pruinose. 7. *R. approximans.*
  Lamellae violet-fulvous; pileus 5–15 mm. broad; surface reddish-brown, densely grayish-tomentose. 8. *R. violaceofulvens.*
  Lamellae cinereous to brown or black.
    Pileus 4–8 mm. broad.
      Surface of pileus glabrous. 9. *R. striatulus.*
      Surface of pileus not glabrous.
        Pileus gray or blackish with a tinge of blue. 10. *R. applicatus.*
        Pileus black or blackish-brown.
          Pileus pulverulent; lamellae broad. 11. *R. niger.*
          Pileus slightly hispid; lamellae narrow. 12. *R. subbarbatus.*
    Pileus 6–16 mm. broad, blackish with gray tomentum. 13. *R. atropellitus.*

1. **Resupinatus atrocoeruleus** (Fries) Murrill, Mycologia 4: 214. 1912.

Agaricus atrocoeruleus Fries, Obs. Myc. 1: 95. 1815.
Agaricus (*Pleurotus*) *barbatulus* Berk. & Curt. Ann. Mag. Nat. Hist. III. 4: 287. 1859.
Pleurotus atrocoeruleus Gill. Champ. Fr. 335. 1876.

Pileus at first resupinate, becoming dimidiate, sessile, conchate, tough, often somewhat imbricate, 2–5 cm. broad; surface villose-tomentose, dark-blue, grayish, or brown, rarely pallid, margin often subglabrous, sometimes crenate-lobed: lamellae concentric, rather narrow, slightly ventricose, crowded, white or yellowish: spores ellipsoid, smooth, hyaline, sometimes curved, 6–8×4–5 μ; cystidia fusoid, hyaline, 50–75×10–15 μ.

TYPE LOCALITY: Sweden.
HABITAT: Dead wood of various kinds.
DISTRIBUTION: Throughout temperate North America; also in Europe.
ILLUSTRATIONS: Schaeff. Fung. Bavar. *pl. 246, f. 3, 9;* Saunders, Smith & Bennett, Myc. Illust. *pl. 6, f. 1–3;* Cooke, Brit. Fungi *pl. 243 (289) B.*
EXSICCATI: Sydow, Fungi Exot. *203;* Desmaz. Pl. Crypt. Fr. *2153;* Ellis & Ev. N. Am. Fungi *2502.*

2. **Resupinatus griseus** (Peck) Murrill.

Pleurotus atrocoeruleus griseus Peck, Ann. Rep. N. Y. State Mus. 44: 147 (35). 1891.
Pleurotus griseus Peck, Bull. N. Y. State Mus. 131: 25. 1909.

Pileus at first resupinate, becoming dimidiate, sessile, conchate, tough, often somewhat imbricate, 1.5–4 cm. broad; surface grayish or grayish-brown, clothed with rather coarse, pointed, white or grayish hairs, never dark-blue nor villose-tomentose, margin usually glabrous or becoming so: lamellae concentric, rather narrow, slightly ventricose, crowded, white or yellowish: spores pip-shaped, smooth, hyaline, 5–6×2.5–3.5 μ; cystidia fusoid, hyaline, 35–45 ×6–10 μ.

TYPE LOCALITY: Carrollton, New York.
HABITAT: On dead hickory trunks and other forms of deciduous wood.
DISTRIBUTION: New England, New York, and west to Iowa.
EXSICCATI: Ellis & Ev. Fungi Columb. *1202.*

3. **Resupinatus cubensis** Murrill, sp. nov.

Pileus fleshy, thin, dimidiate, semiresupinate at times, 2–4 cm. broad; surface white, densely floccose-fibrillose, entirely smooth, margin not striate, upturned, concolorous: lamellae radi-

ating from a central point, white, very narrow and very much crowded: cystidia fusoid, 60–70×10–15 μ.

Type collected on a dead stick, five miles east of Santiago de las Vegas, Cuba, September 11, 1904, *F. S. Earle 188* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

4. **Resupinatus subbarbatulus** Murrill, sp. nov.

Pileus suborbicular to reniform, rarely dimidiate, very thin, nearly plane above, gregarious to subimbricate, 2–2.5 cm. broad; surface white, pale-avellaneous, or fumosous, slightly sulcate, whitish-pulverulent to whitish-pruinose, margin thin, irregular or lobed, usually pallid: lamellae narrow, inserted, rather distant, white, radiating from a lateral point of attachment.

Type collected on a fallen dead trunk in a coffee plantation on the bank of the Rio Blanco, at Xuchiles, near Cordoba, Mexico, January 17, 1910, *W. A. & Edna L. Murrill 1142* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Mexico, Jamaica, and Cuba.

5. **Resupinatus campanulatus** (Peck) Murrill.

Pleurotus campanulatus Peck, Ann. Rep. N. Y. State Mus. 44: 131 (19). 1891.

Pileus thin, subtenacious, campanulate, attached by the vertex, which is sometimes prolonged into a short stipe, 2–4 mm. broad; surface black, glabrous or sprinkled with a few grayish hairs, often plicate-striate on the margin; lamellae few, distant, whitish; spores curved, smooth, hyaline, 7.5–8.5×3.5–4 μ.

TYPE LOCALITY, Saugerties, New York.
HABITAT: On dead branches of mulberry.
DISTRIBUTION: Known only from the type locality.
ILLUSTRATIONS: Ann. Rep. N. Y. State Mus. 44: *pl. 2, f. 13–15.*

6. **Resupinatus orizabensis** Murrill, sp. nov.

Pileus campanulate, attached by the vertex, somewhat collapsing, solitary, reaching 7 mm. broad; surface smooth or slightly striate, fumosous to bluish-black, minutely whitish-pruinose, margin concolorous, entire, inflexed on drying; lamellae radiating from the center, very thin and delicate, narrow, distant, white, the interspaces white and smooth.

Type collected on fallen dead sticks in coffee plantations at Orizaba, Mexico, January 10–14, 1910, *W. A. & Edna L. Murrill 804* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

7. **Resupinatus approximans** (Peck) Murrill.

Pleurotus approximans Peck, Bull. N. Y. State Mus. 150: 37. 1911.

Pileus thin, tough, subgelatinous, dimidiate or subflabelliform or with a short stemlike base, 6–12 mm. broad; surface more or less strigulose-hairy, especially toward the base, becoming pruinose or subglabrous with age, pallid, grayish-brown, or smoky-brown, margin at first involute, thin, not striate, expanded or slightly recurved: lamellae narrow, close, tapering toward each end, converging to a basal point, creamy-yellow, minutely bristly on the edges and sides with projecting, hyaline, pointed cystidia, which are 60–80×15–20 μ.

TYPE LOCALITY: Sylvan Beach, Oneida County, New York.
HABITAT: On decaying wood and bark.
DISTRIBUTION: Known only from the type locality.

8. **Resupinatus violaceofulvens** (Batsch) Murrill.

Agaricus violaceofulvens Batsch, Elench. Fung. 95. 1783.
Panus violaceofulvus Quél. Champ. Jura Vosg. 205. 1872.
Panus salicinus Peck, Ann. Rep. N. Y. State Mus. 24: 77. 1872.

Pileus thin, resupinate, becoming dimidiate, convex to expanded, deflexed or subpendulous, gregarious to imbricate, 5–15 mm. broad; surface reddish-brown beneath the tomentum, clothed with a dense, felted, grayish tomentum, margin involute; lamellae concentric, broad, ventricose, thin, of medium distance, violet-fulvous, pale-brownish in dried specimens: spores cylindric, somewhat curved, smooth, hyaline, 8–11×2–3 μ.

TYPE LOCALITY: Jena, Germany.
HABITAT: On dead deciduous or coniferous wood.
DISTRIBUTION: Eastern United States from Canada to North Carolina and Colorado; also in Europe.
ILLUSTRATIONS: Boud. Ic. Myc. *pl. 82;* Quél. Champ. Jura Vosg. 1: *pl. 14, f. 2;* Batsch, Elench. Fung. *f. 39.*
EXSICCATI: Shear, N. Y. Fungi *108;* Thüm. Myc. Univ. *405;* Ellis & Ev. N. Am. Fungi *2503.*

9. **Resupinatus striatulus** (Pers.) Murrill.

Agaricus striatulus Pers. Syn. Fung. 485. 1801.
Pleurotus striatulus Gill. Champ. Fr. 336. 1876.

Pileus membranous, very delicate, resupinate or subcupular, then reflexed, sometimes obconic and pendulous, sessile, scattered or gregarious, 4–8 mm. broad; surface slightly striate when moist, strongly striate or corrugate when dry, flaccid, glabrous, cinereous or brown: lamellae few, distant, whitish or cinereous: spores subglobose, 5–6 μ.

TYPE LOCALITY: Europe.
HABITAT: On much decayed wood, especially of coniferous trees.
DISTRIBUTION: New England to Alabama in the eastern United States; Blue Mountains, Jamaica; also in Europe.
ILLUSTRATIONS: Cooke, Brit. Fungi *pl. 212 (292) B*; Gill. Champ. Fr. *pl. 240 (535), f. 3.*
EXSICCATI: Rav. Fungi Car. 4: *2.*

10. **Resupinatus applicatus** (Batsch) S. F. Gray, Nat. Arr. Brit. Pl. 1: 617. 1821.

Agaricus applicatus Batsch, Elench. Fung. Contin. 1: 171. 1786.
Pleurotus applicatus Gill. Champ. Fr. 335. 1876.

Pileus firm, submembranous, cup-shaped, resupinate to reflexed, sessile, gregarious, 4–7 mm. broad; surface dark-gray or blackish with a tinge of blue, subpruinose to subglabrous, villose at the base, often striatulate on the margin: lamellae broad, thick, distant, paler than the surface of the pileus or concolorous, the edges usually paler: spores globose, smooth, hyaline, 4–5 μ.

TYPE LOCALITY: Jena, Germany.
HABITAT: On dead bark and wood.
DISTRIBUTION: Cosmopolitan.
ILLUSTRATIONS: Atk. Stud. Am. Fungi *f. 111;* Sow. Engl. Fungi *pl. 301;* Cooke, Brit. Fungi *pl. 244 (291) C;* Gill. Champ. Fr. *pl. 240 (535), f. 1*; Batsch, Elench. Fung. *f. 125.*
EXSICCATI: Ellis, N. Am. Fungi *102;* Shear, N. Y. Fungi *105;* Allesch. & Schn. Fungi Bavar. *148;* Rav. Fungi Am. *409;* Ellis & Ev. Fungi Columb. *1564;* Roum. Fungi Gall. *2702.*

11. **Resupinatus niger** (Schw.) Murrill.

Agaricus (Pleuropus) niger Schw. Schr. Nat. Ges. Leipzig 1: 90. 1822.
Agaricus (Pleurotus) niger Fries, Elench. Fung. 1: 26. 1828.
Pleurotus niger Sacc. Syll. Fung. 5: 380. 1887.

Pileus small, thin, subresupinate to cup-shaped or fan-shaped, often attached by the vertex, not pellucid, gregarious, not imbricate, 4–6 mm. broad; surface black, opaque, pulverulent, smooth, blackish-villose behind, margin plicate, concolorous: lamellae radiating from the point of attachment, broad, black, rather crowded, the edges at first cinereous: spores subglobose, smooth, hyaline, 4–5 μ.

TYPE LOCALITY: North Carolina.
HABITAT: On dead bark and wood.
DISTRIBUTION: Throughout temperate and tropical North America.
EXSICCATI: Rav. Fungi Car. 1: *1;* Ellis & Ev. N. Am. Fungi *2008.*

12. **Resupinatus subbarbatus** (Berk. & Curt.) Murrill.

Agaricus (Pleurotus) subbarbatus Berk. & Curt. Jour. Linn. Soc. 10: 288. 1868.
Pleurotus subbarbatus Sacc. Syll. Fung. 5: 383. 1887.

Pileus fan-shaped, collapsing and adhering to the matrix, 8 mm. broad; surface blackish-brown, slightly hispid, margin striatulate, undulate, concolorous: lamellae narrow, concolorous, crowded.

TYPE LOCALITY: Cuba.
HABITAT: On dead logs.
DISTRIBUTION: Cuba, Guadeloupe, and Dominica.

13. **Resupinatus atropellitus** (Peck) Murrill.

Pleurotus atropellitus Peck, Ann. Rep. N. Y. State Mus. **39**: 65. 1887.

Pileus very thin, tough, flaccid, resupinate or reflexed, convex or subplane, suborbicular or reniform, 6–16 mm. broad; surface blackish-brown or black, with gray tomentum, villose-tomentose except on the margin, which is thin and slightly striate when moist: lamellae crowded, rather broad, blackish-brown or black, the edges white: spores subpellucid, smooth, hyaline, 7.5–9×4–5 μ: stipe absent, but the pileus is sometimes prolonged into a short, grayish-tomentose tubercle.

TYPE LOCALITY: Fort Edward, New York.
HABITAT: On decayed trunks of both deciduous and coniferous trees.
DISTRIBUTION: New York, Connecticut, and Pennsylvania.

DOUBTFUL SPECIES

Agaricus (*Pleurotus*) *algidus* Fries, Syst. Myc. **1**: 190. 1821. This European species has been several times reported from eastern North America. It is characterized by its glabrous, brown surface. *Resupinatus approximans* would seem to account for all the forms referred to this species in America.

Agaricus (*Plęurolus*) *mastrucatus* Fries, Syst. Myc. **1**: 190. 1821. This European species was reported several times from the eastern United States by the older collectors. Peck says in his 50th Annual Report that it is very rare. It is distinguished from the other species of the genus by its squamose pileus.

Agaricus (*Pleuropus*) *pelliculosus* Schw. Schr. Nat. Ges. Leipzig **1**: 90. 1822. Described from North Carolina. Apparently related to *R. atrocoeruleus* or to some abnormal form of *Lentinus* or *Panellus*.

Agaricus (*Pleurotus*) *Racodium* Berk. & Curt. Ann. Mag. Nat. Hist. III. **4**: 288. 1859. This species was very briefly described from specimens collected on rotten wood in Pennsylvania by Michener. It is said to differ from *R. applicatus* in its dense covering of black hairs.

16. **MARASMIELLUS** Murrill, gen. nov.

Pileus small, irregular, membranous, reviving: lamellae adnate or adnexed: spores hyaline: veil none: stipe filiform, tubular, short, lateral or very eccentric, sometimes wanting.

Type species, *Marasmiellus juniperinus* Murrill.

Pileus 2–3 mm. broad.	1. *M. inconspicuus.*
Pileus 10 mm. or more broad.	
Pileus light-brown, glabrous.	2. *M. juniperinus.*
Pileus purple, tomentose.	3. *M. purpureus.*

1. **Marasmiellus inconspicuus** Murrill, sp. nov.

Pileus eccentric, convex, usually stipitate, but varying to sessile, gregarious, 2–3 mm. broad: surface white, finely tomentose, margin lobed: lamellae adnate, distant, rather narrow, irregular, inserted, white, radiating from an eccentric or lateral point: stipe usually lateral, rarely eccentric, sometimes wanting, cylindric, white, fibrillose, 1–2 mm. long.

Type collected on a dead stick, five miles east of Santiago de las Vegas, Cuba, September 11, 1904, *F. S. Earle 191* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

2. **Marasmiellus juniperinus** Murrill, sp. nov.

Pileus shaped like a finger nail, with a short, very eccentric stipe, firm, opaque, gregarious, reaching 1.5 cm. broad; surface light-brown, glabrous, slightly sulcate, especially toward the margin: lamellae rather broad, firm, twice inserted, not interveined, adnate, white and subdistant when young, becoming very distant and light-brown with age, the interspaces also changing from white to brownish: stipe almost lateral, tough, slightly enlarged upward, pruinose to glabrous, smooth, 1–2.5 mm. long, 0.5–1 mm. thick.

Type collected on the bark of a living trunk of *Juniperus barbadensis* at Cinchona, Jamaica, December 25–January 8, 1908–9, *W. A. & Edna L. Murrill 484* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

3. **Marasmiellus purpureus** (Berk. & Curt.) Murrill.

Marasmius purpureus Berk. & Curt. Jour. Linn. Soc. **10**: 299. 1868.

Pileus thin, convex to plane, 18 mm. broad; surface purple, tomentose, margin sulcate: lamellae adnexed, distant, broad, purple, interspaces smooth: stipe eccentric, short, white, solid, increasing above, 2–4 mm. long.

TYPE LOCALITY: Cuba.
HABITAT: On stumps in woods.
DISTRIBUTION: Known only from the type locality.

17. **PANELLUS** P. Karst. Bidr. Finl. Nat. Folk **32**: 96. 1879.

Rhipidium Wallr. Fl. Crypt. Germ. **2**: 742. 1833. Not *Ripidium* Trin. 1820.
Hemicybe P. Karst. Bidr. Finl. Nat. Folk **32**: 248. 1879.

Pileus fleshy-tough to slightly woody, reviving, dimidiate: lamellae radiating from a lateral point: spores hyaline: stipe lateral or none: veil none.

Type species, *Panellus stypticus* (Bull.) P. Karst.

Hymenophore 1–3 cm. broad, isabelline; context strongly astringent; stipe short, lateral. — 1. *P. stypticus.*
Hymenophore not as above.
  Tropical species.
    Lamellae very crowded and narrow.
      Pileus avellaneous. — 2. *P. jalapensis.*
      Pileus white or yellowish.
        Lamellae dichotomous, the edges quite obtuse. — 3. *P. cantharelloides.*
        Lamellae not dichotomous, the edges thin.
          Stipe tomentose, distinct. — 4. *P. subcantharelloides.*
          Stipe glabrous, usually a mere tubercle. — 5. *P. flabellatus.*
    Lamellae rather distant and broader; pileus sessile. — 6. *P. eugrammus.*
  Temperate species.
    Pileus 1–3 cm. broad.
      Surface of pileus umbrinous, fading to white; lamellae umbrinous to black. — 7. *P. dealbatus.*
      Surface of pileus ochraceous to luteous; lamellae white or yellowish. — 8. *P. haematopus.*
    Pileus 5–10 cm. broad.
      Surface of pileus conspicuously villose-tomentose, reddish-brown. — 9. *P. ursinus.*
      Surface of pileus floccose-scrupose, radiate-costate, alutaceous. — 10. *P. vulpinus.*

1. **Panellus stypticus** (Bull.) P. Karst. Bidr. Finl. Nat. Folk **32**: 96. 1879.

Agaricus stypticus Bull. Herb. Fr. *pl. 140.* 1782.
Panus stypticus Fries, Epicr. Myc. 399. 1838.

Pileus tough, conchate, spatulate to reniform, about 1–3 cm. broad; surface isabelline to subfulvous, nearly even, zoned at times, the cuticle breaking into granules or small scales, margin entire or lobed, incurved when young: context thin, firm, rather tough, watery-white, taste not always evident at once, but becoming strongly acrid and astringent; lamellae narrow, thin, crowded, interveined, isabelline, determinate: spores globose, smooth, hyaline, 2–4 × 1–3 μ: stipe lateral, short, swollen above, solid, compressed, pruinose, pale-isabelline or dull-white above, darker below.

TYPE LOCALITY: France.
HABITAT: On stumps of deciduous trees in woods.
DISTRIBUTION: Temperate North America; Sir John Peak, Jamaica, and Jalapa, Vera Cruz; also in Europe and Asia.
ILLUSTRATIONS: Bull. Herb. Fr. *pl. 140;* Gill. Champ. Fr. *pl. 248 (510)*; Hard, Mushrooms *f. 178;* Hussey, Ill. Brit. Myc. **2**: *pl. 8;* Mycologia **3**: *pl. 40, f. 16;* Sow. Engl. Fungi *pl. 104.*

2. **Panellus jalapensis** Murrill, sp. nov.

Pileus rather thin, opaque, petal-shaped, convex, cespitose, 2–4 cm. broad; surface finely striate, pubescent to glabrous, tomentose behind, avellaneous, margin nearly white, isabelline and strongly incurved on drying: context fleshy, white, with a sweet, farinaceous taste; lamellae white, narrow, crowded, inserted, not forked, very attenuate and decurrent behind, the edges slightly toothed at times, especially toward the margin: stipe very short, eccentric to nearly lateral, tapering to the base, white, tomentose, 5–8 mm. long, about 2–4 mm. thick.

Type collected on a log in woods near Jalapa, Mexico, December 12–20, 1909, *W. A. & Edna L. Murrill 125* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

3. **Panellus cantharelloides** Mont. Ann. Sci. Nat. IV. 1: 120. 1854.

Pileus soft-coriaceous, thin, flabelliform, more or less umbilicate, 2 cm. broad; surface white or yellowish, glabrous, lobed and faintly striate on the margin: lamellae short-decurrent, densely crowded, dichotomous, very narrow, the edges entire and quite obtuse: stipe eccentric to nearly lateral, glabrous, concolorous, woody, 3–4 cm. long, 2 cm. thick.

TYPE LOCALITY: French Guiana.
HABITAT: On fallen dead wood.
DISTRIBUTION: Cuba, Guadeloupe, and Martinique; also in Guiana.

4. **Panellus subcantharelloides** Murrill, sp. nov.

Pileus flabelliform to subcircular, thin, fleshy-tough, umbilicate to somewhat infundibuliform, solitary to gregarious, 3–4 cm. broad; surface white, glabrous, pruinose at the center, margin entire, concolorous, usually inflexed on drying: lamellae decurrent, several times inserted, not dichotomous, very narrow and very crowded, thin, white: spores ovoid, smooth, hyaline, 5×3 μ: stipe short, tapering upward, white, tomentose, woody, about 1 cm. long and 2–3 mm. thick.

Type collected on an old root at the base of El Yunque Mountain, Cuba, March, 1903, *L. M. Underwood & F. S. Earle 1320* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

5. **Panellus flabellatus** Murrill, sp. nov.

Pileus sessile or with a very short lateral stipe, flabelliform, usually convex and more or less irregular, very thin, imbricate-cespitose, 3–6 cm. long and 6–10 cm. broad; surface glabrous, smooth, white to cremeous or ochraceous, margin concolorous, irregular or lobed: context thin, fleshy-tough, with rather pleasant taste and odor: lamellae extremely crowded and narrow, inserted but not forked, white to ochraceous, the edges entire: spores ovoid, smooth, hyaline, 5×3–4 μ: stipe a mere lateral tubercle, at times reaching 1 cm. in length, white, glabrous or slightly pruinose, marked with the decurrent lamellae.

Type collected on a fallen log in dense woods near Jalapa, Mexico, December 12–20, 1909, *W. A. & Edna L. Murrill 201* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Vera Cruz; also in Venezuela.

6. **Panellus eugrammus** (Mont.) Murrill.

Agaricus (Pleurotus) eugrammus Mont. Ann. Sci. Nat. II. 8: 366. 1837.
Lentinus eugrammus Mont. Pl. Cell. Cuba 414. 1842.
Agaricus lobulatus Lév. Ann. Sci. Nat. III. 5: 116. 1846.
Panus eugrammus Fries, Nova Acta Soc. Sci. Upsal. III. 1: 40. 1851.
Panus Wrightii Berk. & Curt. Jour. Linn. Soc. 10: 299. 1868.
Panus applanatus Massee, Jour. Bot. 30: 196. 1892.
Phyllotus imbricatus Earle, Inf. An. Estac. Centr. Agron. Cuba 1: 233. 1906.
Phyllotus hygrophanus Earle, Inf. An. Estac. Centr. Agron. Cuba 1: 233. 1906.
Geopetalum album Earle, Inf. An. Estac. Centr. Agron. Cuba 1: 234. 1906.

Pileus sessile, coriaceous-membranous, tough, dimidiate, reniform, 2–6 cm. broad; surface subtomentose, often smooth, pallid to reddish-cervinous, thinly and radiately lined, margin expanded, at length flabelliform-ovate, radiate-sulcate when moist, lobed: lamellae simple, dimidiate, decurrent, broad, rather distant, concolorous, becoming reddish: spores ellipsoid, 6×3 μ: stipe short or obsolete, white.

TYPE LOCALITY: Cuba.
HABITAT: Various forms of dead wood.
DISTRIBUTION: Throughout tropical America at low elevations.
ILLUSTRATIONS: Inf. An. Estac. Centr. Agron. Cuba 1: *pl. 30, 34;* Mont. Pl. Cell. Cuba *pl. 17, f. 2.*

7. **Panellus dealbatus** (Berk.) Murrill.

Panus dealbatus Berk. Lond. Jour. Bot. 6: 317. 1847.

Pileus soft-coriaceous, flabelliform, sometimes lobed, 2 cm. broad; surface umbrinous when fresh, white with dark border on drying, minutely cracked as if whitewashed, margin striate: lamellae not interveined, distinct, decurrent, narrow, umbrinous to blackish, sometimes with

white edges: spores oblong-ellipsoid, smooth, hyaline, 7×3.5 μ: stipe lateral, dilated upward, often canaliculate, compressed, concolorous, dealbate, 6 mm. or more long.

TYPE LOCALITY: Waynesville, Ohio.
HABITAT: On dead branches and trunks of deciduous trees.
DISTRIBUTION: New York, Ohio, Missouri, North Carolina, and Alabama.

8. **Panellus haematopus** (Berk.) Murrill.

Lentinus haematopus Berk. Grevillea 1: 33. 1872.
Lentinus anisatus P. Henn. Verh. Bot. Ver. Prov. Brand. 39: vc. 1898.

Pileus thin, plane, umbilicate or centrally depressed, about 3×2.5 cm.; surface hygrophanous, glabrous, ochraceous with a luteous tint, margin lobed: context having a very fragrant odor; lamellae plane or slightly ventricose, inserted, minutely serrate at times, anastomosing at the base, not crowded, white to cream-colored: spores ellipsoid, hyaline, 1–2-guttulate, 6–7×3–4 μ: stipe short or obsolete, firm, eccentric, glabrous, blood-red and almost laccate at the base, 4–6 mm. long, about 4 mm. thick.

TYPE LOCALITY: North America.
HABITAT: Dead branches and trunks of maple, willow, and certain other deciduous trees.
DISTRIBUTION: New England to North Carolina and west to Michigan; also in Europe.
ILLUSTRATION: Boud. Ic. Myc. *pl. 81*[2].
EXSICCATI: Sydow, Myc. Mar. *4702*.

9. **Panellus ursinus** (Fries) Murrill.

Agaricus ursinus Fries, Syst. Myc. 1: 185. 1821.
Lentinus ursinus Fries, Epicr. Myc. 395. 1838.

Pileus fleshy to fleshy-tough, dimidiate or conchate to semiorbicular, often imbricate, 5–10 cm. broad; surface even on the margin, at first whitish and glabrous, then reddish-brown and hairy or tomentose toward the base; context whitish, having an acrid taste and rather strong odor; lamellae broad, lacerate or dentate on the edges, white to dull-rosy-avellaneous: spores minute, globose, uninucleate, smooth, hyaline, 3–4 μ.

TYPE LOCALITY: Sweden.
HABITAT: On decaying wood.
DISTRIBUTION: Eastern North America; also in Europe.
ILLUSTRATION: Bres. Fungi Trid. *pl. 66*.
EXSICCATI: Ellis & Ev. N. Am. Fungi *1923*.

10. **Panellus vulpinus** (Sow.) Murrill.

Agaricus vulpinus Sow. Engl. Fungi *pl. 361*. 1802.
Lentinus vulpinus Fries, Syn. Gen. Lent. 13. 1836.

Pileus soft-fleshy, sessile, reniform-conchate, imbricate-multiplex, 5–10 cm. broad; surface corrugate, longitudinally costate, floccose-scrupose, alutaceous, margin incurved, entire, discolored with age: context fleshy to somewhat tough, white; lamellae crowded, broad, dentate-lacerate, white: spores subglobose, smooth, hyaline, 3–4 μ.

TYPE LOCALITY: Islington, England.
HABITAT: Stumps and logs of elm and certain other trees.
DISTRIBUTION: Eastern United States.
ILLUSTRATIONS: Fries, Ic. Hymen. *pl. 176, f. 1;* Sow. Engl. Fungi *pl. 361*.

DOUBTFUL SPECIES

Lentinus castoreus Fries, Epicr. Myc. 395. 1838. Erroneously reported from Cuba.

Lentinus pilosus Fries, Epicr. Myc. 395. 1838. (*Agaricus* (*Pleurotus*) *pilosus* Fries, Linnaea 5: 508. 1830.) Described from Beyrich's collections in Brazil. No authentic material has been found, either from Brazil or Mexico.

Lentinus (*Resupinatus*) *proboscideus* Fries, Nova Acta Soc. Sci. Upsal. III. 1: 38. 1851. Collected by Oersted in Costa Rica and said by Fries to be related to *L. castoreus*.

Lentinus Verae-Crucis Berk.; Berk. & Curt. Jour. Linn. Soc. 10: 303. 1868. Described from Vera Cruz, Mexico, as flabelliform, white, farinaceous-tomentose, 2.5–4 cm. broad; lamellae distant, entire, broad; stipe short, farinaceous.

Panus Robinsonii Mont. Syll. Crypt. 149. 1856. The type specimens, collected near

Columbus, Ohio, have the size and appearance of *Melanoleuca lateraria*, a species with very much crowded lamellae.

Panus Sullivantii Mont. Syll. Crypt. 149. 1856. Described from Columbus, Ohio. The type specimens resemble *Collybia*.

18. **TECTELLA** Earle, Bull. N. Y. Bot. Gard. **5**: 433. 1909.

Pileus reviving, resupinate, poculate, fasciculate: lamellae concentric from a central point: spores hyaline: veil soon vanishing.

Type species, *Panus operculatus* Berk. & Curt.

1. **Tectella patellaris** (Fries) Murrill.

Panus patellaris Fries, Epicr. Myc. 400. 1838.
Panus operculatus Berk. & Curt. Ann. Mag. Nat. Hist. III. **4**: 296. 1859.
Tectella operculata Earle, Bull. N. Y. Bot. Gard. 5: 433. 1909.

Pileus fasciculate-erumpent, cupuliform, apex affixed, 12–14 mm. broad; surface rufous, furfuraceo-villous to glabrate: lamellae at first covered by a veil, narrow, thin.

TYPE LOCALITY: Sweden.
HABITAT: Dead branches of beech, alder, willow, and birch.
DISTRIBUTION: Canada to Louisiana in eastern North America; also in Europe.
ILLUSTRATIONS: Cooke, Brit. Fungi *pl. 1144 C;* Fries, Ic. Myc. *pl. 176, f. 3.*
EXSICCATI: Ellis & Ev. N. Am. Fungi *2010.*

19. **HELIOMYCES** Lév. Ann. Sci. Nat. III. **2**: 177. 1844.

Pileus circular, thin, subgelatinous, reviving: lamellae adnexed, adnate, or decurrent: spores hyaline: stipe central, slender, tubular, horny: veil none.

Type species, *Heliomyces elegans* Lév.

Lamellae few, distant.
  Species growing in the soil; lamellae decurrent. 1. *H. terrestris.*
  Species growing on decayed wood.
    Pileus white or pallid, not becoming darker on drying.
      Pileus scarcely 1 cm. broad; lamellae decurrent. 2. *H. translucens.*
      Pileus 1–2 cm. broad; lamellae adnate. 3. *H. striatus.*
    Pileus some shade of yellow or brown, or becoming so on drying.
      Pileus avellaneous or pale-bay, at least when dry.
        Pileus 2 cm. or less broad. 4. *H. subavellaneus.*
        Pileus 3–6 cm. broad.
          Pileus deeply umbilicate or infundibuliform. 5. *H. subspodoides.*
          Pileus plane or only slightly depressed. 6. *H. hondurensis.*
      Pileus pallid, tinged with yellow or latericeous, at least when dry.
        Pileus and lamellae white or pallid, becoming yellowish on drying. 7. *H. Peckii.*
        Pileus and lamellae tinged with latericeous when dry. 8. *H. rubritinctus.*
        Pileus and lamellae white, becoming reddish or brown on drying; the only temperate species. 9. *H. decolorans.*
Lamellae numerous, crowded; species growing on decayed wood.
  Hymenophore solitary. 10. *H. angustifolius,*
  Hymenophore cespitose.
    Pileus umbilicate; lamellae interveined. 11. *H. multifolius.*
    Pileus umbonate; lamellae not interveined. 12. *H. foetens.*

1. **Heliomyces terrestris** Murrill, sp. nov.

Pileus convex to subexpanded, umbilicate, gregarious, 1 cm. broad; surface smooth, glabrous, striate over the lamellae, pallid, becoming yellowish on drying, margin entire, concolorous, inflexed on drying: lamellae distinctly decurrent, broad, distant, not interveined, white: stipe smooth, glabrous, pallid to pale-reddish-brown, equal, hollow, 2–3 cm. long, 1 mm. thick.

Type collected in soil in British Honduras, 1906, *Morton E. Peck* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

2. **Heliomyces translucens** Murrill, sp. nov.

Pileus small, thin, entirely translucent, deeply umbilicate, solitary, reaching 1 cm. broad; surface pellucid, smooth, glabrous, striate over the lamellae, margin entire, inflexed on drying:

lamellae narrow, distant, not interveined, decurrent, white: stipe smooth, glabrous, white, slender, hollow, not twisted on drying, 2–2.5 cm. long, 0.5 mm. thick.

Type collected on dead wood in British Honduras, 1906, *Morton E. Peck* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

3. **Heliomyces striatus** Murrill, sp. nov.

Pileus convex to expanded or slightly depressed, translucent entirely to the center, gregarious, 1–2 cm. broad; surface smooth, glabrous, shining, pallid, appearing like a thin animal membrane, striate over the lamellae from center to margin, the striations more conspicuous on drying, margin entire, not inflexed on drying: lamellae very narrow and distant, attenuate toward the margin, adnate, twice inserted, not interveined, white: stipe hollow, smooth, glabrous, slightly tapering upward, bay to dark-chestnut, 4–5 cm. long, 1–2 mm. thick.

Type collected on dead wood in British Honduras, 1906, *Morton E. Peck* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

4. **Heliomyces subavellaneus** Murrill, sp. nov.

Pileus convex to expanded, slightly depressed, subtranslucent except at the disk, gregarious, 1.5–2 cm. broad; surface smooth, glabrous, striate over the lamellae, the striations gray or black in dried specimens, avellaneous or with a pale-fuliginous tint, darker at the center, margin concolorous, entire, inflexed on drying: lamellae distant, narrow, a few short ones inserted, not interveined, decurrent, white to discolored: stipe expanded and whitish-pruinose at the apex, glabrous and blackish-brown below, hollow, compressed on drying, 2.5 cm. long, 1.5–2 mm. thick.

Type collected on a mossy log near Rio Prieto, Porto Rico, 690–1035 m., August 10–15, 1914, *J. A. Shafer 3690* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Porto Rico and British Honduras.

5. **Heliomyces subspodoides** Murrill, sp. nov.

Pileus membranous, translucent, convex, deeply umbilicate, reaching 4 cm. broad; surface conspicuously striate over the lamellae, hygrophanous, pallid to discolored, margin entire, very thin, not incurved on drying: lamellae several times inserted, very narrow, attenuate at both ends, connected by anastomosing veins, distant, pallid, decurrent, not rounded behind: stipe increasing below, smooth, glabrous, rather stout, hollow, pallid, about 3 cm. long and 3–5 mm. thick.

Type collected on dead wood in British Honduras, 1906, *Morton E. Peck* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

6. **Heliomyces hondurensis** Murrill, sp. nov.

Pileus convex to subexpanded, entirely translucent except at the center, not umbonate, at times slightly depressed, scattered, reaching 4 cm. broad; surface smooth, glabrous, striate over the lamellae, pallid, pale-bay on drying, margin entire, concolorous: lamellae of medium breadth, distant, 2 or 3 times inserted, adnate, not interveined, white to discolored: stipe slender, grayish-pruinose to glabrous and brownish, smooth, slightly twisted and longitudinally grooved on drying, 4–7 cm. long, 2–3 mm. thick.

Type collected on dead wood in British Honduras, 1906, *Morton E. Peck* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

7. **Heliomyces Peckii** Murrill, sp. nov.

Pileus convex to plane, slightly umbonate, becoming depressed around the umbo, translucent at the margin, gregarious, 1–2 cm. broad; surface smooth, pruinose to glabrous, striate over the lamellae, at least when dry, pallid, tinged with yellow on drying, margin entire, concolorous: lamellae rather broad, distant, twice inserted, not interveined, adnate, broad and rounded behind, attenuate toward the margin, white, becoming yellowish and very undulate on drying: stipe pruinose to glabrous, grooved and enlarged at the apex, slender and equal below, pallid or avellaneous, hollow, twisted on drying, whitish at the base, 3–4 cm. long, 1–1.5 mm. thick.

Type collected on dead wood in British Honduras, 1906, *Morton E. Peck* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

8. **Heliomyces rubritinctus** Murrill, sp. nov.

Pileus convex to plane, slightly umbonate when young, entirely subtranslucent, gregarious, 1–2 cm. broad; surface smooth, glabrous, striate over the lamellae, pallid with a latericeous tint which becomes very pronounced on drying, margin entire, concolorous: lamellae distant, twice inserted, not interveined, adnexed, of medium breadth for the genus, latericeous when dry: stipe smooth, glabrous, pallid or grayish, slender, equal, twisted on drying, at times reddish-tinged, 2–3 cm. long, 1 mm. thick.

Type collected on dead wood in British Honduras, 1906, *Morton E. Peck* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

9. **Heliomyces decolorans** Berk. & Curt. Ann. Mag. Nat. Hist. III. **4**: 295. 1859.

Pileus slightly irregular, convex to expanded, solitary to gregarious, 2–3 cm. broad; surface white, changing to reddish or brownish when dried, deeply sulcate-striate, glabrous, rugose: lamellae adnexed to slightly decurrent, rather broad, distant, unequal, white, changing like the surface on drying: stipe central, very slender, horny, glabrous, white, discolored, 2.5–5 cm. long.

TYPE LOCALITY: Alabama.
HABITAT: On fallen dead branches and leaves.
DISTRIBUTION: Alabama and Mississippi.
EXSICCATI: Rav. Fungi Car. 5: 7.

10. **Heliomyces angustifolius** Murrill, sp. nov.

Pileus convex to subexpanded, slightly depressed on the disk, subtranslucent except at the center, solitary, 3 cm. broad; surface smooth, glabrous, multistriate over the lamellae, pallid with darker center, becoming bay or chestnut on drying, margin entire, white to pallid, not inflexed on drying: lamellae adnate, narrow, crowded, twice inserted, not interveined, white to discolored: stipe cylindric, enlarged at the apex and base, grayish-pruinose, not glabrescent, compressed and rigid when dry, 4 cm. long, 1.5–2.5 mm. thick.

Type collected on dead wood in British Honduras, 1906, *Morton E. Peck* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

11. **Heliomyces multifolius** Murrill, sp. nov.

Pileus convex to plane, usually umbilicate, entirely translucent, densely cespitose, 1.5–2 cm. broad; surface smooth, glabrous, multistriate over the lamellae, pallid with a yellowish tint, slightly darker at the center, margin very thin, becoming eroded with age: lamellae exceedingly numerous, narrow and crowded, interveined, many of them forked, slightly decurrent, white: stipe slender, smooth, glabrous, equal, hollow, compressed on drying, 3–4 cm. long, 1–2 mm. thick.

Type collected on dead wood in British Honduras, 1906, *Morton E. Peck* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

12. **Heliomyces foetens** Pat. Jour. de Bot. **3**: 337. 1889.

Pileus thin, membranous, orbicular, umbonate, cespitose, 1.5–3 cm. broad; surface glabrous, reddish, margin pellucid, lacerate: lamellae adnexed, numerous, very narrow, equal, not anastomosing: spores ovoid, smooth, hyaline, 6×4 μ: stipe central, slender, rigid, enlarged at the apex, glabrous, slightly striate, 6–8 cm. long, 1–2 mm. thick.

TYPE LOCALITY: Martinique.
HABITAT: On dead wood of *Prunus occidentalis*.
DISTRIBUTION: Known only from the type locality.

DOUBTFUL SPECIES

Agaricus (*Hiatula*) *crenulatus* Fries, Nova Acta Soc. Sci. Upsal. III. **1**: 27. 1851. Collected by Oersted on the island of San Lucas, on the west coast of Costa Rica. A good sketch is to be seen at Copenhagen, but no specimens.

20. MARASMIUS* Fries, Gen. Hymen. 9. 1836.

Eomycenella Atk. Bot. Gaz. **34**: 37. 1902.
Mycetinis Earle, Bull. N. Y. Bot. Gard. **5**: 414. 1909.
Collybiopsis Earle, Bull. N. Y. Bot. Gard. **5**: 415. 1909.
Scorteus Earle, Bull. N. Y. Bot. Gard. **5**: 415. 1909.

Pileus tough-fleshy to membranous, usually epixylous, reviving when moistened; surface variously colored, often sulcate or striate, not zonate, dry, glabrous or rarely minutely tomentose or pruinose, the margin involute or straight when young: context more or less tough and dry, sometimes soft-fleshy but not brittle; lamellae dry, rather thin, often interveined but seldom forking, developing slowly, rarely remaining very narrow and almost vein-like: spores hyaline, smooth (angular in one species), usually ellipsoid, maturing slowly and unequally so that it is often difficult to find ripe spores in dried plants: stipe central or somewhat eccentric, slender, tough, stuffed or hollow: veil none.

Type species, *Marasmius androsaceus* (L.) Fries.

Species occurring in tropical North America. I.
Species occurring in temperate North America. II.

I. SPECIES OCCURRING IN TROPICAL NORTH AMERICA

Pileus minute, 1–3 mm. broad (reaching 4 mm. in *M. Hiorami*).
  Surface of pileus white or whitish, rarely darker on the disk.
    Disk blackish and papillate. 1. *M. Peckii.*
    Disk white or pallid.
      Stipe 4–10 mm. long.
        Pileus 1–2 mm. broad.
          Surface subpellucid, pruinose. 2. *M. petiolorum.*
          Surface opaque, glabrous. 3. *M. Marbleae.*
        Pileus 2–3 mm. broad.
          Surface subtranslucent, glabrous. 4. *M. subtenerrimus.*
          Surface opaque, pulverulent. 5. *M. bermudensis.*
      Stipe 10–20 mm. long.
        Pileus umbilicate.
          Stipe pallid, 1–1.5 cm. long. 6. *M. theobromicola.*
          Stipe fulvous, 2.5 cm. or more long. 7. *M. chrysochaetes.*
        Pileus not umbilicate.
          Stipe pallid throughout. 8. *M. proletarius.*
          Stipe pale-yellow below. 9. *M. inaequalis.*
    Surface of pileus pale-yellow.
      Lamellae adnate; pileus 3 mm. broad. 10. *M. subglobosus.*
      Lamellae decurrent; pileus 1 mm. broad. 11. *M. flavellus.*
    Surface of pileus brownish-cinnamon; pileus convex; lamellae distant, pallid; stipe 2 mm. long. 12. *M. nanus.*
    Surface of pileus umbrinous; pileus hemispheric; lamellae few, pallid. 13. *M. guyanensis.*
    Surface of pileus bay, blackish and papillate at the center; pileus 2–4 mm. broad. 14. *M. Hiorami.*
Pileus small, 3–10 mm. broad.
  Surface of pileus white or pallid, rarely slightly darker at the center.
    Stipe white or pallid throughout.
      Stipe glabrous.
        Lamellae free; stipe 10–12 mm. long. 15. *M. stylobates.*
        Lamellae decurrent; stipe 1.5–4 cm. long.
          Stipe 1.5–2 cm. long. 16. *M. praedecurrens.*
          Stipe 4 cm. long. 17. *M. niveicolor.*
      Stipe minutely pruinose or floccose, sometimes becoming subglabrous.
        Pileus scarcely 5 mm. broad, not striate; lamellae crowded. 18. *M. setulosipes.*
        Pileus 6–10 mm. broad, striate; lamellae distant. 19. *M. synodicus.*
    Stipe brownish or blackish below.
      Stipe 1 cm. or less long.
        Lamellae adnate; pileus usually darker on the disk. 20. *M. Earlei.*
        Lamellae decurrent; pileus not darker on the disk. 21. *M. pruinosulus.*
      Stipe 2–3 cm. long; lamellae adnate.
        Pileus umbilicate, unicolorous. 22. *M. praetortipes.*
        Pileus umbonate, slightly darker at the center. 23. *M. hondurensis.*
      Stipe 5–8 cm. long; lamellae free; plant terrestrial. 24. *M. glebigenus.*
  Surface of pileus pale-avellaneous or pale-isabelline, fading to white on drying.
    Stipe 1 cm. long. 25. *M. graminis.*
    Stipe 4 cm. long. 26. *M. subrotula.*
  Surface of pileus ochraceous, darker on the disk; pileus 2–4 mm. broad; stipe blackish, 1 cm. long. 27. *M. Crescentiae.*

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* The entire treatment of the temperate species of *Marasmius* here included, together with the description of the genus, has been contributed by LEIGH H PENNINGTON.

Surface of pileus fulvous.
Pileus 3–4 mm. broad; densely cespitose. 28. *M. aciculaeformis.*
Pileus 6–10 mm. broad.
Stipe pellucid. 29. *M. hinnuleus.*
Stipe fulvous to brown.
Pileus 6 mm. broad; lamellae crowded. 30. *M. personatus.*
Pileus 10 mm. broad; lamellae distant. 31. *M. sulcatipes.*
Stipe blackish. 32. *M. rugulosus.*
Stipe reddish-brown. 33. *M. musicola.*
Surface of pileus avellaneous to umbrinous or brown, often tinged with rose or bay, not fading to white on drying.
Stipe less than 2 cm. long.
Stipe black. 34. *M. picipes.*
Stipe not black.
Lamellae cream-colored. 35. *M. Underwoodii.*
Lamellae pale-fuscous. 36. *M. tenebrarum.*
Stipe more than 2 cm. long.
Stipe 2–3 cm. long. 37. *M. colimensis.*
Stipe 4–6 cm. long. 38. *M. soliformis.*
Surface of pileus blackish-blue-green; pileus 8 mm. broad; stipe 12 mm. long. 39. *M. atroviridis.*
Surface of pileus pale-red, fading to isabelline on drying; pileus 5–8 mm. broad; stipe 2–2.5 cm. long. 40. *M. pallescens.*
Surface of pileus bay.
Pileus 5 mm. broad. 41. *M. jamaicensis.*
Pileus 5–10 mm. broad.
Lamellae pallid; stipe glabrous.
Lamellae adnexed; stipe 0.5–1 mm. thick. 42. *M. Wilsonii.*
Lamellae adnate to a slight collar; stipe 0.5 mm. thick. 43. *M. paucifolia.*
Lamellae fulvous; stipe pubescent. 44. *M. portoricensis.*
Surface of pileus dark-purple; lamellae few, dark-purple on the edges when young. 45. *M. atropurpureus.*
Pileus medium to large, more than 1 cm. broad.
Surface of pileus mostly white or pallid, sometimes darker at the center.
Pileus becoming eccentric; stipe usually rather short and curved.
Stipe white above, reddish-brown below. 46. *M. stenophyllus.*
Stipe rosy-isabelline throughout.
Pileus 1–1.5 cm. broad. 47. *M. troyanus.*
Pileus 2 cm. broad. 48. *M. subplexifolius.*
Pileus never eccentric; stipe long, erect.
Pileus plane, umbonate, 12–18 mm. broad; lamellae distant.
Stipe 0.5 mm. thick. 49. *M. albofuscus.*
Stipe 1–1.5 mm. thick. 50. *M. cubensis.*
Pileus convex to subexpanded, not umbonate, 0.5–2 cm. broad; lamellae subcrowded. 51. *M. hinnuleiformis.*
Pileus conspicuously depressed, 4–6 cm. broad. 52. *M. clitocybiformis.*
Surface of pileus white to plumbeous, umbilicate, 12 mm. broad; stipe twisted, 6–8 cm. long. 53. *M. tortipes.*
Surface of pileus pale-green. 54. *M. viridifuscus.*
Surface of pileus isabelline or fulvous, sometimes with grayish tints.
Pileus 1–3 cm. broad, rarely larger in *M. montanus.*
Pileus convex, rarely fully expanding, umbonate or gibbous.
Stipe 3 cm. long. 55. *M. Harrisii.*
Stipe 4–8 cm. long.
Pileus gibbous; lamellae crowded.
Stipe grayish-pulverulent. 56. *M. cinereialbus.*
Stipe glabrous, polished. 57. *M. jalapensis.*
Pileus prominently umbonate; lamellae not crowded. 58. *M. obsoletus.*
Pileus plane or depressed, never umbonate.
Stipe glabrous.
Lamellae white. 59. *M. putredinis.*
Lamellae fulvous. 60. *M. coracicolor.*
Stipe pruinose, becoming subglabrous at times.
Stipe 5 mm. thick; species terrestrial. 61. *M. pruinosifolius.*
Stipe 1–2 mm. thick; species not terrestrial.
Stipe densely velvety-pruinose. 62. *M. cervinicolor.*
Stipe whitish-pulverulent to subglabrous.
Pileus 7–15 mm. broad. 63. *M. bahamensis.*
Pileus 2–4 cm. broad.
Pileus plane. 64. *M. hemileucus.*
Pileus umbilicate or depressed. 65. *M. montanus.*
Pileus 4–7 cm. broad.
Lamellae free; stipe 2.5 cm. long. 66. *M. fibrosipes.*
Lamellae adnate; stipe 5 cm. long. 67. *M. subpruinosus.*
Surface of pileus bay, chestnut, reddish, or ferruginous.
Lamellae crowded and connected by conspicuous reticulate veins. 68. *M. polyporoides.*
Lamellae distant, not conspicuously connected by veins.
Pileus ferruginous, 4 cm. broad. 69. *M. Berteroi.*
Pileus bay or chestnut, not more than 2 cm. broad.

Stipe pruinose to glabrous, 2.5 cm. long. 70. *M. badius.*
Stipe glabrous and shining from the first, 3–6 cm. long.
Lamellae about 12–16 in number. 71. *M. haematocephalus.*
Lamellae about 8 in number. 72. *M. tageticolor.*
Surface of pileus some shade of purple or violet.
Surface pale-purple, fading to whitish on drying; lamellae decurrent; pileus infundibuliform. 73. *M. purpurascens.*
Surface purple or violet, not fading to whitish on drying.
Pileus about 2 cm. broad.
Lamellae pallid. 74. *M. sericipes.*
Lamellae blackish-purple. 75. *M. glaucopus.*
Pileus 2–6 cm. broad. 76. *M. ionides.*
Surface of pileus brown or somewhat blackish.
Surface pale-fuscous; lamellae adnexed; pileus convex. 77. *M. coracipes.*
Surface brown, rarely tinged with violet.
Stipe less than 1 cm. long. 78. *M. curtipes.*
Stipe 2 cm. or more long.
Pileus becoming distinctly depressed; lamellae not crowded.
Lamellae decurrent. 79. *M. cyathiformis.*
Lamellae adnate. 80. *M. subcyathiformis.*
Pileus convex to plane; lamellae crowded. 81. *M. Johnstonii.*

II. SPECIES OCCURRING IN TEMPERATE NORTH AMERICA

Pileus fleshy or subfleshy, 1 cm. or more broad; stipe more or less tomentose or hairy, at least below; lamellae free or adnexed.
Pileus white. 123. *M. phyllophilus.*
Pileus not white, sometimes pallid in dried plants.
Plants large, the pileus 2 cm. or more broad.
Lamellae crowded.
Plants with odor and taste strong of onions.
Spores small. 82. *M. polyphyllus.*
Spores 12–14 μ long. 83. *M. prasiosmus.*
Plants without odor or taste of onions.
Stipe smooth above.
Pileus umbonate; western plants. 87. *M. washingtonensis.*
Pileus not umbonate; eastern plants. 88. *M. fasciatus.*
Stipe more or less tomentose throughout.
Lamellae free, remote; stipe enlarged at the apex. 84. *M. confluens.*
Lamellae adnexed; stipe not enlarged at the apex.
Stipe long and twisted; pileus usually pallescent. 85. *M. archiropus.*
Stipe not long and twisted; pileus brown. 86. *M. multifolius.*
Lamellae not crowded.
Taste strong and acrid; lamellae usually becoming reddish.
Pileus purple. 89. *M. iocephalus.*
Pileus not purple.
Lamellae broad. 90. *M. peronatus.*
Lamellae narrow.
Stipe long. 91. *M. subnudus.*
Stipe short. 92. *M. rubrophyllus.*
Taste not strong and acrid.
Plants dark-purplish-brown. 96. *M. fuscopurpureus.*
Plants not dark-purplish-brown.
Lamellae free, usually growing in lawns or grassy places. 93. *M. caryophylleus.*
Lamellae adnexed, growing in woods.
Stipe spongy, thickened at the base. 94. *M. spongiosus.*
Stipe short, neither spongy nor thick at the base.
Lamellae not dark in dry plants. 95. *M. dichrous.*
Lamellae becoming brown or reddish. 92. *M. rubrophyllus.*
Plants smaller, the pileus rarely 2 cm. broad.
Stipe white or entirely covered with a white tomentum.
Pileus small, 8–10 mm. broad; lamellae attached to a free collar. 131. *M. Olneii.*
Pileus larger, 10–20 cm. broad; lamellae adnexed. 97. *M. Sutliffae.*
Stipe neither entirely white nor covered with a white tomentum.
Pileus umbonate.
Plants densely cespitose. 87. *M. washingtonensis.*
Plants not densely cespitose.
Lamellae broad behind. 98. *M. trullisatipes.*
Lamellae narrow. 99. *M. umbonatus.*
Pileus not umbonate.
Odor or taste strong or disagreeable.
Lamellae annulate-adnexed; pileus umbilicate and striate. 100. *M. foetidus.*
Lamellae not annulate-adnexed; pileus not umbilicate.
Lamellae few, distant; odor mephitic. 101. *M. Copelandi.*
Lamellae subcrowded; odor of onions. 83. *M. prasiosmus.*

- Odor or taste neither strong nor disagreeable.
  - Stipe slender, long-radicating; pileus red. — 102. *M. elongatipes.*
  - Plants not as above.
    - Stipe strigose-tomentose, at least in the lower part.
      - Pileus striate or plicate.
        - Stipe nearly smooth and dark above. — 103. *M. semihirtipes.*
        - Stipe white-pubescent above.
          - Cystidia present. — 104. *M. castaneicolor.*
          - Cystidia absent. — 105. *M. biformis.*
      - Pileus smooth, not striate.
        - Some of the lamellae subdecurrent, darker in dry plants. — 106. *M. contrarius.*
        - Lamellae not decurrent, usually pallescent.
          - Stipe glabrous above. — 103. *M. semihirtipes.*
          - Stipe not glabrous above.
            - Lamellae rather broad, adnexed. — 94. *M. spongiosus.*
            - Lamellae narrow, adnate.
              - Cystidia present. — 104. *M. castaneicolor.*
              - Cystidia absent. — 107. *M. velutipes.*
    - Stipe not strigose-tomentose.
      - Margin of pileus little, if at all, striate.
        - Stipe thickened upward, base tuberculose. — 95. *M. dichrous.*
        - Stipe not thickened upward, not tuberculose.
          - Lamellae broad. — 108. *M. subtomentosus.*
          - Lamellae narrow.
            - Stipe long. — 91. *M. subnudus.*
            - Stipe short. — 92. *M. rubrophyllus.*
      - Margin of pileus striate or plicate.
        - Stipe long, even.
          - Lamellae broad, ventricose, ciliate. — 109. *M. subpilosus.*
          - Lamellae narrow, not ciliate. — 91. *M. subnudus.*
        - Stipe short, thickened upward. — 95. *M. dichrous.*

- Pileus subfleshy to membranous; stipe smooth, pruinose, or subtomentose; lamellae squarely adnate or decurrent.
  - Pileus white.
    - Lamellae decurrent.
      - Pileus papillate.
        - Spores 10 μ or more long. — 110. *M. magnisporus.*
        - Spores less than 10 μ long.
          - Lamellae close. — 111. *M. papillatus.*
          - Lamellae distant. — 112. *M. languidus.*
      - Pileus not papillate.
        - Lamellae broad.
          - Stipe bulbous; growing upon soil and buried twigs; spores 7–9 μ long. — 113. *M. vialis.*
          - Stipe increasing upward; growing upon wood or other vegetable debris; spores 10–12 μ long. — 110. *M. magnisporus.*
        - Lamellae narrow.
          - Lamellae and stipe with minute resinous particles or hairs. — 114. *M. resinosus.*
          - Lamellae and stipe without resinous particles or hairs. — 115. *M. salignus.*
    - Lamellae not decurrent.
      - Cystidia present. — 116. *M. squamula.*
      - Cystidia absent.
        - Spores irregularly angular. — 117. *M. nigripes.*
        - Spores not angular.
          - Odor strong. — 118. *M. perforans.*
          - Odor not strong.
            - Stipe hollow, base swollen above and contracted to a point below. — 119. *M. praeacutus.*
            - Stipe of uniform thickness.
              - Stipe very short, upon herbaceous plants in swamps. — 120. *M. caricicola.*
              - Stipe not very short.
                - Pileus neither distinctly striate nor plicate.
                  - Stipe pallid. — 121. *M. opacus.*
                  - Stipe becoming reddish. — 122. *M. ramulinus.*
                - Pileus distinctly striate or plicate.
                  - Lamellae narrow, adnexed. — 123. *M. phyllophilus.*
                  - Lamellae broadly adnate. — 124. *M. insititius.*
  - Pileus not white.
    - Lamellae decurrent.
      - Pileus yellow to ferruginous. — 125. *M. tomentosipes.*
      - Pileus neither yellow nor ferruginous.
        - Stipe glabrous above. — 126. *M. alienus.*
        - Stipe not glabrous above. — 106. *M. contrarius.*
    - Lamellae not decurrent.

Pileus small, 3 mm. or less broad.	
Plant minute, pubescent.	133. *M. minutissimus.*
Plant not pubescent.	
Pileus smoky-brown, smooth.	138. *M. concinnus.*
Pileus pale-straw-colored, striate.	134. *M. cucullatus.*
Pileus more than 3 mm. broad.	
Stipe beset with white or tawny hairs.	102. *M. elongatipes.*
Stipe not beset with hairs.	
Stipe brown or blackish.	
Pileus becoming darker in dried plants.	127. *M. felix.*
Pileus becoming paler in dried plants.	
Stipe smooth.	128. *M. badiceps.*
Stipe tomentose.	124. *M. insititius.*
Stipe neither brown nor blackish.	
Stipe glabrous; pileus reddish-brown.	129. *M. leptopus.*
Stipe farinaceous or subtomentose.	
Pileus white with a reddish disk.	
Stipe contracted to a point below.	119. *M. praeacutus.*
Stipe not contracted to a point below.	130. *M. ramealis.*
Pileus rufescent.	131. *M. Olneii.*
Pileus pale-yellowish-brown then whitish, plicate-striate.	124. *M. insititius.*
Pileus usually membranous; stipe smooth and shining except in a few small plants with a pileus less than 5 mm. broad.	
Plants small; pileus usually less than 3 mm. broad.	
Pileus white.	
Pileus 1–2 mm. broad, smooth.	132. *M. filopes.*
Pileus small, less than 1 mm., hairy under a lens.	133. *M. minutissimus.*
Pileus not white.	
Stipe pale-straw-colored.	134. *M. cucullatus.*
Stipe neither yellow nor straw-colored.	
Stipe blackish-brown, shining.	135. *M. minutus.*
Stipe pallid, brownish below.	
Cystidia present.	136. *M. pirinus.*
Cystidia absent.	137. *M. thujinus.*
Stipe white.	138. *M. concinnus.*
Plants larger; pileus usually over 3 mm. broad.	
Pileus fleshy or subfleshy, membranous only in large plants.	
Plants with odor of onions.	139. *M. alliatus.*
Plants without odor of onions.	
Pileus white or light-yellow.	
Stipe brown, mycelioid; cystidia present.	140. *M. delectans.*
Stipe reddish-brown, not mycelioid; cystidia absent.	141. *M. calopus.*
Pileus neither white nor light-yellow.	
Plants densely cespitose.	
Eastern plants.	88. *M. fasciatus.*
Western plants.	87. *M. washingtonensis.*
Plants not densely cespitose.	
Cystidia present; lamellae broad.	142. *M. glabellus.*
Cystidia absent.	
Pileus pale-pink or purplish.	143. *M. bellipes.*
Pileus vinous-red or bay-brown.	144. *M. plicatulus.*
Pileus membranous.	
Pileus white.	
Lamellae attached to a free collar.	145. *M. rotula.*
Lamellae not attached to a free collar.	
Stipe black, paler at the apex.	146. *M. albiceps.*
Stipe pale-straw-colored.	147. *M. straminipes.*
Pileus not white.	
Lamellae attached to a free collar.	
Pileus alutaceous to umber, umbilicate.	148. *M. capillaris.*
Pileus reddish-white, umbonate.	149. *M. graminum.*
Lamellae not attached to a free collar.	
Pileus ochraceous, ochraceous-red, or brown.	
Cystidia present.	142. *M. glabellus.*
Cystidia absent.	150. *M. siccus.*
Pileus not colored as above.	
Lamellae purplish-gray.	151. *M. melanopus.*
Lamellae not purplish-gray.	
Pileus campanulate; maroon or vinous-red.	152. *M. pulcherripes.*
Pileus convex to plane or depressed.	
Pileus red-brown or vinous-red.	135. *M. minutus.*
Pileus fuscous, pinkish, or rarely whitish.	153. *M. androsaceus.*

1. **Marasmius Peckii** Murrill, sp. nov.

Pileus minute, hemispheric, not expanding, umbilicate, gregarious, reaching 2 mm. broad; surface radiate-sulcate, finely rugose, glabrous, whitish or gray, blackish and papillate at the

center, margin entire, concolorous: lamellae very broad and distant, about 8 in number, attached to a collar, not interveined, pallid: stipe capillary, smooth, glabrous, shining, brown or blackish, inserted, 2–3 cm. long.

Type collected on dead leaves in British Honduras, 1906, *Morton E. Peck* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: British Honduras and Porto Rico.

2. **Marasmius petiolorum** Berk. & Curt. Jour. Linn. Soc. **10**: 296. 1868.

Pileus convex to subplane, gregarious, 1 mm. broad; surface subpellucid, pruinose, margin striate: lamellae white, adnate, few, broad: stipe pruinose, pellucid, 6 mm. long.

TYPE LOCALITY: Cuba.
HABITAT: On leaf petioles and nerves.
DISTRIBUTION: Known only from the type locality.

3. **Marasmius Marbleae** Murrill, sp. nov.

Pileus minute, opaque, convex, not fully expanding, rarely subumbonate, gregarious, 2 mm. broad; surface white, not striate, subglabrous, smooth, margin entire, concolorous: lamellae adnate, rather broad, distant, interveined, firm, somewhat undulate on the edges, white: spores ellipsoid, smooth, hyaline, 5–7×3–4 μ: stipe filiform, minutely pulverulent, inserted, pale-bay, at least when dry, 4–6 mm. long, 0.2 mm. thick.

Type collected on fallen dead sticks on the road between St. Paul and Derry, Cockpit Country, Jamaica, September 13–18, 1906, *Elizabeth G. Britton & Delia W. Marble 340* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Cockpit Country, Jamaica.

4. **Marasmius subtenerrimus** Murrill, sp. nov.

Pileus convex when very young but soon becoming plane or slightly depressed, very thin and tough but somewhat translucent, gregarious, reaching 3 mm. broad; surface white, smooth, glabrous, appearing striate over the lamellae, margin irregular or slightly lobed, concolorous: lamellae few, forked, narrow, adnate or slightly decurrent, white: spores globose to ellipsoid, smooth, hyaline, granular, 4–6 μ: stipe filiform, smooth, glabrous, white above, usually slightly pruinose below, expanding as it enters the leaf, 5–7 mm. long.

Type collected on fallen dead leaves in British Honduras, 1906, *Morton E. Peck* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

5. **Marasmius bermudensis** Berk. Jour. Linn. Soc. **15**: 49. 1876.

Pileus convex, 2 mm. broad; surface white, pulverulent, margin inflexed, subsulcate: lamellae short-adnate, distant, not interveined, pale-alutaceous when dry, edges white: stipe short, pellucid above, pulverulent below, 6–12 mm. long.

TYPE LOCALITY: Paynter's Vale, Bermuda.
HABITAT: On dead coffee wood.
DISTRIBUTION: Known only from the type locality.

6. **Marasmius theobromicola** Murrill, sp. nov.

Pileus hemispheric to convex, umbilicate, not expanding, small, gregarious, reaching 2 mm. broad; surface white, subpruinose, especially at the center, becoming glabrous, striate, margin entire, concolorous: lamellae adnate, very broad, few, distant, plane, not interveined, white: spores ovoid, smooth, hyaline, 5–6×3–4 μ; stipe filiform, white, smooth, glabrous, enlarged at the apex, whitish-mycelioid at the base, 1–1.5 cm. long.

Type collected on decayed cocoa pods in dense shade at "The Bower," St. George's, Grenada, West Indies, September, 1905, *W. E. Broadway* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

7. **Marasmius chrysochaetes** Berk. & Curt. Jour. Linn. Soc. **10**: 297. 1868.

Pileus convex, umbilicate, 2 mm. broad; surface white, margin sulcate: lamellae white, few, broad, with a collar: stipe slender, elongate, glabrous, fulvous, 2.5 cm. or more long.

TYPE LOCALITY: Cuba.
HABITAT: On dead leaves.
DISTRIBUTION: Cuba.

8. **Marasmius proletarius** Berk. & Curt. Jour. Linn. Soc. **10**: 296. 1868.

Pileus gregarious, convex, 2 mm. broad; surface white, margin slightly sulcate, at first inflexed: lamellae plane or ventricose, broad, attached: stipe pallid, opaque, rigid, setiform, tomentose at the base, 12–18 mm. long.

TYPE LOCALITY: Cuba.
HABITAT: On dead sticks.
DISTRIBUTION: Known only from the type locality.

9. **Marasmius inaequalis** Berk. & Curt. Jour. Linn. Soc. **10**: 297. 1868.

Pileus convex, 1–3 mm. broad; surface white, margin plicate: lamellae few, thick, obtuse, white: stipe elongate, with a white pellicle above, opaque and pale-yellow below, strigose at the base, 1–2 cm. long.

TYPE LOCALITY: Cuba.
HABITAT: On dead sticks.
DISTRIBUTION: Known only from the type locality.

10. **Marasmius subglobosus** Berk. & Curt. Jour. Linn. Soc. **10**: 295. 1868.

Pileus hemispheric, 3 mm. broad; surface flavid: lamellae concolorous, broad, adnate: stipe glabrous, sulcate, 6 mm. long, dilated at the base.

TYPE LOCALITY: Cuba.
HABITAT: On sticks in woods.
DISTRIBUTION: Known only from the type locality.

11. **Marasmius flavellus** (Berk. & Curt.) Murrill.

Agaricus (*Omphalia*) *flavellus* Berk. & Curt. Jour. Linn. Soc. **10**: 286. 1868.

Pileus convex, umbonate, solitary or gregarious, 1 mm. broad; surface sulfur-colored,pallid when dry, glabrous, striate, margin entire, inflexed on drying: lamellae decurrent, few, distant: stipe capillary, soon glabrous, slightly dilated at the apex, pallid, slightly brownish on drying, 0.5–1 cm. long, about 0.1 mm. thick.

TYPE LOCALITY: Cuba.
HABITAT: On sticks in woods.
DISTRIBUTION: Cuba.

12. **Marasmius nanus** Massee, Jour. Bot. **30**: 161. 1892.

Pileus convex to subexpanded, obtuse, gregarious, 2 mm. broad; surface dry, tough, smooth, glabrous, brownish-cinnamon, margin entire, concolorous: lamellae adnate, distant, pallid: spores subglobose, smooth, hyaline, about 4 μ: stipe short, enlarged above, pallid, smooth, glabrous, 2 mm. long, with conspicuous, white, strigose, radiating mycelium at the base.

TYPE LOCALITY: Morne Cochon, St. Vincent.
HABITAT: On dead trunks.
DISTRIBUTION: Known only from the type locality.

13. **Marasmius guyanensis** Mont. Ann. Sci. Nat. IV. **1**: 114. 1854.

Pileus membranous, very thin, hemispheric, soon expanded; surface umbrinous, margin radiate-plicate, denticulate: lamellae pallid, scarcely reaching the stipe, very narrow, convex, attenuate at the ends, 8–12 in number: stipe glabrous, striatulate, floccose at the base, capillary.

TYPE LOCALITY: Guiana.
HABITAT: On dead leaves.
DISTRIBUTION: Cuba; also in Guiana.
ILLUSTRATION: Ann. Sci. Nat. IV. **1**: *pl. 11, f. 5.*

14. **Marasmius Hiorami** Murrill, sp. nov.

Pileus membranous, hemispheric to convex, umbilicate, gregarious, 2–4 mm. broad; surface bay, glabrous, radiate-sulcate, appearing pulverulent under a lens, blackish and papillate at

the center, margin entire, concolorous: lamellae about 12 in number, rather broad, adnate, somewhat arcuate, subconcolorous: stipe fuliginous to blackish, capillary, smooth, glabrous, polished, inserted, 2–3 cm. or more long.

Type collected on dead leaves and fallen sticks in woods near San Juan, Porto Rico, November, 1912, *Brother Hioram* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Porto Rico.

15. **Marasmius stylobates** Berk. & Curt. Jour. Linn. Soc. **10**: 296. 1868.

Pileus thin, convex to plane, 4 mm. broad; surface white, glabrous, margin inflexed, sulcate: lamellae white, free, broad, distant: stipe white, glabrous, hollow, base orbicular, 12 mm. long.

TYPE LOCALITY: Cuba.
HABITAT: On rotten wood.
DISTRIBUTION: Known only from the type locality.

16. **Marasmius praedecurrens** Murrill, sp. nov.

Pure-white throughout; pileus convex to nearly plane, umbonate when young, usually becoming depressed about the umbo with age, gregarious, 3–4 mm. broad; surface smooth, striate to pruinose, especially at the center, becoming more or less glabrous with age, margin very thin, entire: lamellae long-decurrent, of medium breadth, not crowded, not interveined: stipe filiform, smooth, glabrous, slightly enlarged at the apex, whitish-mycelioid at the base, slightly pruinose and usually much twisted on drying, 1.5–2 cm. long.

Type collected on moist ground among mosses and sticks in Bermuda, November 29–December 14, 1912, *Brown, Britton, & Seaver 1383* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

17. **Marasmius niveicolor** Murrill, sp. nov.

Pileus conic to broadly convex with a subconic umbo, small and thin, pellucid, cespitose, 5–7 mm. broad; surface snow-white, smooth, glabrous, striate, finely pruinose under a lens, margin entire, concolorous: lamellae decurrent, broad, distant, inserted, white: spores ovoid, smooth, hyaline, granular, 7–8×3–4 μ: stipe very long and capillary, white, smooth, glabrous, 4 cm. long.

Type collected on fallen dead wood at Motzorongo, near Cordoba, Mexico, January 15, 1910, *W. A. & Edna L. Murrill* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

18. **Marasmius setulosipes** Murrill, sp. nov.

Pileus convex to plane, small, thin, solitary, scarcely reaching 5 mm. broad; surface milk-white, unicolorous, glabrous, not striate, margin entire, concolorous: lamellae adnate, crowded, of medium breadth, not interveined, white: stipe slender, slightly tapering upward, grayish, not twisted on drying, densely covered with very minute, short, irregular, pointed hairs, which do not disappear with age, 1.5–2 cm. long, 1 mm. thick below, 0.5 mm. thick at the apex.

Type collected on dead fallen leaves and sticks at Lake Cunningham, New Providence, Bahama Islands, September 8, 1904, *Elizabeth G. Britton 651* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

19. **Marasmius synodicus** (Kunze) Fries, Epicr. Myc. 381. 1838.

Agaricus (*Collybia*) *synodicus* Kunze; Fries, Linnaea 5: 507. 1830.
Marasmius dealbatus Berk. & Curt. Jour. Linn. Soc. **10**: 296. 1868.
Marasmius catervatus Massee, Jour. Bot. **30**: 161. 1892.
Marasmius cerussatus Pat.; Duss, Enum. Champ. Guad. 46. 1903.

Pileus convex to expanded, varying from slightly umbonate to slightly depressed, gregarious, 6–10 mm. broad; surface white or pallid, subpruinose to subglabrous, usually striate or sulcate, at least when dry, margin entire, concolorous: lamellae adnate, distant, inserted, forking, usually interveined, white or pallid: spores ellipsoid, smooth, hyaline, 6×4 μ: stipe

whitish, floccose-pruinose to subglabrous, mycelioid at the base, subequal, usually increasing below, 1–2 cm. long, about 1 mm. thick.

TYPE LOCALITY: Surinam.
HABITAT: On dead sticks, leaf-stalks, grass, etc.
DISTRIBUTION: Cuba, Porto Rico, Jamaica, and Guadeloupe; also in Surinam.
ILLUSTRATIONS: Jour. Bot. **30**: *pl. 322, f. 15, 16.*

20. **Marasmius Earlei** Murrill, sp. nov.

Pileus small, opaque, convex to subexpanded, broadly but distinctly depressed at the center with age, gregarious, 3–5 mm. broad; surface finely pubescent to glabrous, whitish, smooth, not striate, usually discolored at the center, margin entire, concolorous, inflexed on drying: lamellae broad, adnate, very thin, irregular, several times inserted, ventricose, white, subdistant, scarcely interveined: spores ellipsoid, smooth, hyaline, 6–7×4–5 μ: stipe filiform, rather short, smooth, glabrous, shining, bay above, blackish below, about 5 mm. long, 0.2 mm. thick.

Type collected on a dead log at Castleton Gardens, Jamaica, October 28, 1902, *F. S. Earle 269* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

21. **Marasmius pruinosulus** Murrill, sp. nov.

Pileus convex, obtuse, solitary, 5 mm. broad; surface white, smooth, minutely pruinose, margin entire, concolorous: lamellae decurrent, subdistant, narrow, white: stipe filiform, slightly enlarged at the base, white above, fuliginous below, pruinose, 1 cm. long, 0.5 mm. thick.

Type collected on dead grass stems at Santiago de las Vegas, Cuba, October 16, 1904, *F. S. Earle 284* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

22. **Marasmius praetortipes** Murrill, sp. nov.

Pileus convex, umbilicate, solitary, 5–10 mm. broad; surface white, pruinose-fibrillose, margin irregularly sulcate: lamellae adnate-decurrent, few, forking and interveined, anastomosing, broad, thin, white: stipe filiform, inserted, densely pruinose-velvety, grayish-black, much twisted on drying, 2–3 cm. long, 1 mm. thick.

Type collected on dead twigs at Hope Gardens, Jamaica, November 16, 1902, *F. S. Earle 503* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

23. **Marasmius hondurensis** Murrill, sp. nov.

Pileus convex to subexpanded, umbonate, gregarious, 0.5–1 cm. broad; surface white, slightly darker at the center, striate, glabrous except on the umbo, which is minutely hispid when young, margin thin, plicate and deflexed on drying: lamellae distant, broad, once or twice inserted, not interveined, rather firm and regular, adnate, white: spores ellipsoid, smooth, hyaline, granular, 5–7×3–4 μ: stipe pallid at the apex, black below, finely pubescent, slender, equal, inserted, 2 cm. long, 0.5 mm. thick.

Type collected on dead sticks in British Honduras, 1906, *Morton E. Peck* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

24. **Marasmius glebigenus** Fries, Nova Acta Soc. Sci. Upsal. III. 1: 31. 1851.

Pileus very thin, membranous, campanulate to convex, umbilicate, 4–6 mm. broad; surface whitish, margin deeply plicate: lamellae equal, few, distant, broad, free, without a collar: stipe glabrous, blackish-brown, very slender, with a bulbous clod of earth at the base, capillary, tough, 5–8 cm. long.

TYPE LOCALITY: Morningstar, Island of St. Croix, Danish West Indies.
HABITAT: On the ground.
DISTRIBUTION: Known only from the type locality.

25. **Marasmius graminis** Murrill, sp. nov.

Pileus convex to subexpanded, umbilicate, gregarious to subcespitose, 6–8 mm. broad; surface densely pulverulent, pale-avellaneous, fading to pallid or whitish, the disk darker, margin broadly sulcate: lamellae adnate, with an indistinct collar, distant, forking, rather narrow, white: stipe densely pruinose-floccose throughout, blackish beneath, but whitish or gray because of the pruinose coating, cylindric, firm, 1 cm. long, 0.5 mm. thick.

Type collected on dead Bermuda grass on lawns at Santiago de las Vegas, Cuba, June 1, 1905, *F. S. Earle 375* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

26. **Marasmius subrotula** Murrill, sp. nov.

Pileus small, thin, convex to expanded, slightly umbonate, gregarious or cespitose, 5 mm. broad; surface broadly sulcate, pale-rosy-isabelline, yellowish on the disk, fading to white, pruinose to glabrous, margin entire, concolorous: lamellae adnate, not attached to a collar, few, very distant, not interveined, broad, thick, firm, white: stipe avellaneous to brownish, white at the apex, smooth, glabrous, shining, capillary, compressed, slightly whitish-mycelioid at the base, about 4 cm. long.

Type collected on dead twigs at Hope Gardens, Jamaica, November 6, 1902, *F. S. Earle 501* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

27. **Marasmius Crescentiae** Murrill, sp. nov.

Pileus thin, convex, 2–4 mm. broad; surface ochraceous, darker on the disk, glabrous, margin radiate-rugose-sulcate: lamellae adnate, distant, broad, white: stipe bristle-like, glabrous, blackish-brown, 1 cm. long, 0.5 mm. thick.

Type collected on rotting fruits of Calabash, 5 miles east of Santiago de las Vegas, Cuba, September 11, 1904, *F. S. Earle 184* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

28. **Marasmius aciculaeformis** Berk. & Curt. Jour. Linn. Soc. **10**: 297. 1868.

Pileus gregarious, densely cespitose, convex, 4 mm. broad; surface fulvous, margin scarcely sulcate: lamellae white, few: stipe setiform, rigid, glabrous, shining, subfulvous, 4 cm. long.

TYPE LOCALITY: Cuba.
HABITAT: On sticks in woods.
DISTRIBUTION: Known only from the type locality.

29. **Marasmius hinnuleus** Berk. & Curt. Jour. Linn. Soc. **10**: 297. 1868.

Pileus subconic, 8 mm. broad; surface fulvous, glabrous, shining, margin sulcate: lamellae adnexed, distant, thick; stipe pellucid, glabrous, strigose at the base, 2.5 cm. long.

TYPE LOCALITY: Cuba.
HABITAT: On dead leaves.
DISTRIBUTION: Known only from the type locality.

30. **Marasmius personatus** Berk. & Curt. Jour. Linn. Soc. **10**: 297. 1868.

Pileus depressed, 6 mm. broad; surface pale-fulvous, margin striate: lamellae crowded, adnexed: stipe opaque, fulvous, glabrous, rigid, 4 cm. long, the base strigose, sulcate, orbicular.

TYPE LOCALITY: Cuba.
HABITAT: On dead leaves.
DISTRIBUTION: Known only from the type locality.

31. **Marasmius sulcatipes** Murrill, sp. nov.

Pileus convex to expanded, fleshy, solitary, 1 cm. broad; surface glabrous, even, fulvous, margin entire, strongly inflexed on drying: lamellae adnate, distant, once or twice inserted, not

interveined, narrow, firm, pallid: stipe cylindric, enlarged at the apex, glabrous, pruinose at the base, brownish, longitudinally grooved, 3 cm. long, 1 mm. thick.

Type collected on fallen dead leaves at Santiago de las Vegas, Cuba, August 20, 1904, *F. S. Earle 152* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

32. **Marasmius rugulosus** Berk. & Curt. Jour. Linn. Soc. **10**: 294. 1868.

Marasmius subcoracinus Berk. & Curt. Jour. Linn. Soc. **10**: 294. 1868.

Pileus hemispheric to subexpanded, umbonate-depressed, solitary, 5–8 mm. broad; surface fulvous to subfuscous, rugose, darker on the umbo, glabrous, margin multisulcate: lamellae adnate, subdistant, white to discolored, ventricose: spores ellipsoid, smooth, hyaline, granular, 7–8×4–5 μ: stipe filiform, pubescent to subglabrous, fuscous to blackish-brown, 1–2 cm. long, 0.5 mm. thick: rhizomorphs aerial, 5–10 cm. long, rarely branched, smooth, glabrous, black, about 0.5 mm. thick.

TYPE LOCALITY: Cuba.
HABITAT: On sticks and leaves in woods.
DISTRIBUTION: Cuba, Jamaica, and Mexico.

33. **Marasmius musicola** Murrill, sp. nov.

Pileus small, thin, membranous, convex to subexpanded, slightly umbilicate, gregarious, reaching 1 cm. broad; surface glabrous, somewhat rugose, pale-fawn-colored, darker on the disk, fulvous on drying, margin entire, concolorous: lamellae few, very distant, slightly adnexed, broad, whitish: stipe capillary, compressed, often twisted, glabrous, shining, reddish-brown, inserted, 4 cm. long, 0.5 mm. thick.

Type collected on decaying banana trash at Santiago de las Vegas, Cuba, June 17, 1904, *F. S. Earle 85* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Cuba.

34. **Marasmius picipes** Murrill, sp. nov.

Pileus convex to expanded, subdepressed, gregarious, 3–8 mm. broad; surface pale-fulvous, faintly sulcate-striate, minutely floccose-pruinose: lamellae adnate, subdistant, ventricose, white: spores ellipsoid, smooth, hyaline, pointed at one end, 6–7×3–4 μ; stipe cylindric, capillary, smooth, glabrous, black, 1–2 cm. long, 0.5–1 mm. thick.

Type collected on fallen leaves of rose-apple (*Eugenia*), five miles east of Santiago de las Vegas, Cuba, September 11, 1904, *F. S. Earle 183* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

35. **Marasmius Underwoodii** Murrill, sp. nov.

Pileus depressed, umbonate, thin, submembranous, gregarious, 1 cm. broad; surface pale-brownish-flesh-colored, darker on the disk, margin entire, concolorous: lamellae adnate, crowded, narrow, cream-colored; spores ellipsoid, smooth, hyaline, 7×4 μ: stipe equal, glabrous, concolorous, attached to a dense superficial mat of mycelium, 1 cm. long, 1 mm. thick.

Type collected on cocoanut petioles, at the base of El Yunque Mountain, Cuba, March, 1903, *L. M. Underwood & F. S. Earle 895* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

36. **Marasmius tenebrarum** Berk. & Curt. Jour. Linn. Soc. **10**: 294. 1868.

Pileus convex-umbilicate, thin, 8 mm. broad; surface pale-rufous, glabrous, margin radiate-striate: lamellae adnate, crowded, narrow, pale-fuscous: stipe glabrous, white, reddish when dry, thick, solid, 8 mm. long.

TYPE LOCALITY: Cuba.
HABITAT: On sticks in woods.
DISTRIBUTION: Known only from the type locality.

37. **Marasmius colimensis** Murrill, sp. nov.

Pileus convex, not fully expanded, slightly depressed at the center, very thin, subtranslucent, gregarious, rarely subcespitose, 1 cm. broad; surface conspicuously striate over the lamellae, pale-chestnut, rosy-avellaneous on drying, finely pruinose to glabrous, margin entire, concolorous, somewhat deflexed on drying: lamellae white, distant, inserted, adnate, not interveined, rarely forking, narrow: spores globose, smooth, hyaline, 5–6 μ: stipe slender, subconcolorous, smooth, pruinose to glabrous, slightly twisted on drying, often whitish at the apex, whitish-mycelioid at the base, 2–3 cm. long, 1 mm. thick.

Type collected in soil mixed with bits of leaves and sticks in an orchard at Colima, Mexico, January 3–4, 1910, *W. A. & Edna L. Murrill 609* (herb. N. Y. Bot. Gard:).

DISTRIBUTION: Known only from the type locality.

38. **Marasmius soliformis** Murrill, sp. nov.

Pileus convex, not fully expanding, very thin, subtranslucent, solitary, 1 cm. broad; surface glabrous, dull-isabelline with bay disk and conspicuous rays, entirely changing on drying, the disk and rays becoming white while the remainder is rosy-brown, margin entire, deflexed on drying: lamellae rather narrow, distant, adnate to the much enlarged apex of the stipe, inserted, not interveined, whitish-brown on the edges: stipe dull-bay or brownish, more or less covered with minute whitish pubescence, conspicuously whitish-pubescent at the expanded apex, long and slender, smooth, not striate, scarcely twisted on drying, only slightly expanding as it enters the leaf, 4–6 cm. long, 1 mm. thick.

Type collected on fallen dead leaves on Sir John Peak, Jamaica, 2000 m. elevation, January 5, 1909, *W. A. Murrill 789* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

39. **Marasmius atroviridis** Berk. & Curt. Jour. Linn. Soc. **10**: 295. 1868.

Pileus thin, depressed, 8 mm. broad; surface blackish-blue-green, glabrous; lamellae concolorous, broad, crowded, adnexed: stipe glabrous, dilated above, 12 mm. long.

TYPE LOCALITY: Cuba.

HABITAT: On rotten wood in thickets.

DISTRIBUTION: Known only from the type locality.

40. **Marasmius pallescens** Murrill, sp. nov.

Pileus campanulate to subexpanded, becoming slightly umbilicate, gregarious, 5–8 mm. broad; surface glabrous, conspicuously radiate-sulcate over the lamellae, pale-red, fading to isabelline on drying, margin entire, concolorous: lamellae very few and distant, about 10 in number, white, not inserted, broadly adnate and ventricose, tapering toward the margin, interspaces entirely smooth and yellowish: stipe capillary, smooth, glabrous, avellaneous, fuliginous below, whitish-mycelioid at the base, 2–2.5 cm. long, 0.5 mm. thick.

Type collected on leaves and sticks in woods at Rio Piedras, Porto Rico, August 18, 1912, *John R. Johnston 556* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

41. **Marasmius jamaicensis** Murrill, sp. nov.

Pileus conic, not fully expanding, umbonate, membranous, gregarious, reaching 5 mm. broad; surface radiate-striate, becoming multisulcate on drying, unicolorous, bay, glabrous, not polished, margin entire, concolorous, deflexed and folded on drying: lamellae broad, rather crowded, adnexed, white: stipe slender, filiform, white or pallid, smooth, minutely pubescent to subglabrous, whitish-mycelioid at the base, 3–4 cm. long, scarcely 1 mm. thick.

Type collected on fallen dead leaves at Port Maria, Jamaica, November 14, 1902, *F. S. Earle 475* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

42. **Marasmius Wilsonii** Murrill, sp. nov.

Pileus very thin, membranous, convex to expanded, scarcely umbonate, gregarious, about 1 cm. broad; surface glabrous, unicolorous, light-bay, even, becoming slightly rugose on drying,

margin subentire, concolorous, often splitting with age: lamellae adnexed, broad, pallid, distant, about 16 in number: stipe very long, equal, smooth, glabrous, pallid to very slightly brownish, yellowish-mycelioid at the base, 5–8 cm. long, 0.5–1 mm. thick.

Type collected on fallen dead leaves in the Luquillo Mountains, Porto Rico, July, 1902, *Percy Wilson 297* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

43. **Marasmius paucifolius** Murrill, sp. nov.

Pileus small, very thin, convex to subexpanded, slightly gibbous on the disk, gregarious, 5–10 mm. broad; surface smooth, glabrous, rugose on the disk, bay, striate over the lamellae, margin broadly sinuate, entire, concolorous, incurved on drying: lamellae very few and distant, 8–12 in number, attenuate at both ends, ventricose, narrow, adnate to a slight collar, pallid to slightly yellowish, interspaces entirely smooth: stipe capillary, smooth, glabrous, shining, avellaneous to subfuscous, 4–6 cm. long, 0.5 mm. thick.

Type collected on dead leaves at Rio Piedras, Porto Rico, September 6, 1912, *John R. Johnston 580* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

44. **Marasmius portoricensis** Murrill, sp. nov.

Pileus rather firm and opaque, not umbonate, cespitose, 7–10 mm. broad; surface bay, glabrous, rugose-striate, margin concolorous, somewhat dentate, quite irregular on drying: lamellae rather broad, ventricose, 2. or 3 times inserted, adnexed, fulvous, at least when dry: stipe very long, capillary, isabelline, finely and densely pubescent to subglabrous and somewhat shining, 6–8 cm. long, 0.5 mm. thick.

Type collected on leaf-mold at Rio Piedras, Porto Rico, September 6, 1912, *John R. Johnston 570* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

45. **Marasmius atropurpureus** Murrill, sp. nov.

Pileus conic to bell-shaped or hemispheric, not expanding, slightly umbonate, very thin and membranous but entirely opaque, gregarious, about 5 mm. broad, rarely larger; surface beautifully colored, atropurpureous or subvinosous with a darker-purple center, smooth, glabrous, not striate, at least not until dry, minutely rugose under a lens, margin entire or slightly undulate, concolorous: lamellae narrow to medium, distant, about 12 in number, white, not interveined, adnate, attached to a collar, the edge of which, as well as the edges of the young lamellae, is dark-purple like the pileus: stipe long, slender, filiform, smooth, glabrous, polished, avellaneous, at times with a slight brownish tint, slightly whitish-mycelioid at the base, about 4–5 cm. long and 0.5 mm. thick.

Type collected on fallen dead leaves and sticks at Lake Cunningham, New Providence, Bahama Islands, September 8, 1904, *Elizabeth G. Britton 612* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

46. **Marasmius stenophyllus** Mont. Ann. Sci. Nat. IV. 1: 116. 1854.

?*Marasmius hyperellus* Fries, Nova Acta Soc. Sci. Upsal. III. 1: 30. 1851.
Marasmius semiustus Berk. & Curt. Jour. Linn. Soc. 10: 295. 1868.
Marasmius tenerrimus Berk. & Curt. Jour. Linn. Soc. 10: 296. 1868.

Pileus thin, soft, fleshy, but tough and persistent, convex to irregularly expanded, umbilicate, becoming eccentric with age, gregarious to cespitose, 1–4 cm. broad; surface minutely fibrillose to glabrous, radiate-rugose, hygrophanous, pale-yellowish-white to pale-reddish-tan, margin concolorous, incurved when young: lamellae adnate with a slight collar, rarely short-decurrent, rather distant, broad, inserted, the long ones ventricose, white, interveined, often forking: spores ellipsoid, smooth, hyaline, about 7–9×5–6 μ: stipe tough, cylindric, tapering upward, usually curved, glabrous, white at the apex, pale-reddish below, whitish-mycelioid at the base, solid or spongy, at first central, often strongly eccentric with age, 1–4 cm. long, 1–2 mm. thick.

TYPE LOCALITY: French Guiana.
HABITAT: On banana trash and decayed stalks and logs.
DISTRIBUTION: Jamaica, Trinidad, British Honduras, Cuba, and Grenada; also in Guiana.

47. **Marasmius troyanus** Murrill, sp. nov.

Pileus slightly eccentric from its position on a standing trunk, depressed, gregarious to cespitose, reaching 1–1.5 cm. broad; surface nearly white, smooth, pulverulent to glabrous, margin thin, striate, concolorous: lamellae very broad and irregular, not crowded, inserted, not interveined, white, adnate or slightly sinuate; spores ellipsoid, smooth, hyaline, granular, 8–10×5–7 μ: stipe curved, short and rather stout, enlarged above, smooth, glabrous or minutely pruinose, skin-colored, hollow, reaching 1 cm. long and 2 mm. thick.

Type collected on a dead standing palm trunk in an open field in Troy and Tyre, Cockpit Country, Jamaica, *W. A. Murrill & W. Harris 872* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

48. **Marasmius subplexifolius** Murrill, sp. nov.

Pileus very thin, membranous, somewhat eccentric and irregular, deeply depressed, gregarious or very slightly cespitose, 1.5–2.5 cm. broad; surface glabrous, slightly radiate-striate, somewhat pellucid, white, margin concolorous, irregular or slightly lobed: lamellae distant, adnate or rounded behind, narrow, inserted, interveined with a reticulate network, white, thin, becoming yellowish and somewhat undulate on drying: stipe eccentric, expanding upward, smooth, pruinose to glabrous, hollow, whitish to rosy-isabelline, 1.5–2.5 cm. long, 1.5–3 mm. thick.

Type collected on dead wood in Grenada, 1905, *W. E. Broadway* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

49. **Marasmius albofuscus** Berk. & Curt. Jour. Linn. Soc. **10**: 295. 1868.

Pileus thin, plane, umbonate, 12 mm. broad; surface white, brownish on the disk, reticulate, margin striate: lamellae adnate-decurrent, few, distant, broad, interstices trabeculate: stipe slender, glabrous, solid, slightly enlarged above, 2.5 cm. long, 0.5 mm. thick.

TYPE LOCALITY: Cuba.
HABITAT: On logs in woods.
DISTRIBUTION: Known only from the type locality.

50. **Marasmius cubensis** Berk. & Curt. Jour. Linn. Soc. **10**: 296. 1868.

Pileus thin, plane, umbonate, 18 mm. broad; surface white, rugose, margin sulcate: lamellae concolorous, thin, distant, adnexed, interveined: stipe concolorous, pulverulent, thin, 2.5 cm. long, 1–1.5 mm. thick.

TYPE LOCALITY: Cuba.
HABITAT: On dead wood.
DISTRIBUTION: Known only from the type locality.

51. **Marasmius hinnuleiformis** Murrill, sp. nov.

Pileus subconic or convex to subexpanded, variable in size, solitary to subcespitose, 0.5–2 cm. broad; surface glabrous, whitish, ochraceous on the umbo, becoming pale-brownish and striate over the lamellae on drying, margin entire, concolorous, plicate on drying: lamellae adnate, of medium breadth and distance, twice inserted, not interveined, white, whitish-asperulate under a lens: spores ellipsoid, smooth, hyaline, pointed at one end, 5–6×3 μ: stipe equal or slightly tapering upward, finely pruinose to glabrous, pale-brownish, conspicuously whitish-mycelioid at the base, 3–5 cm. long, 1–2 mm. thick.

Type collected in humus in old acorn cups on the ground in woods at Jalapa, Mexico, December 12–20, 1909, *W. A. & Edna L. Murrill 163* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from Jalapa, Vera Cruz.

52. **Marasmius clitocybiformis** P. Henn. Hedwigia **43**: 182. 1904.

Pileus membranous, subtranslucent, dry, umbilicate to subinfundibuliform, cespitose, 4–6 cm. broad; surface whitish, radiate-striate, entirely glabrous even under a lens, margin

entire, concolorous, deflexed on drying: lamellae short-decurrent, very thin, narrow, inserted, of medium distance, whitish to pale-fuscous: spores globose, smooth, hyaline, 3.5–7 μ: stipe firm, woody, terete; equal, smooth, finely tomentose, becoming partially subglabrous with age, cinereous to pale-fuscous, 5–8 cm. long, 1.5–2.5 mm. thick.

TYPE LOCALITY: Miry, on the Juruá River, Brazil.
HABITAT: On decayed logs and stumps.
DISTRIBUTION: British Honduras; also in Bolivia and Brazil.

53. **Marasmius tortipes** Berk. & Curt. Jour. Linn. Soc. **10**: 298. 1868.

Pileus campanulate, umbilicate, 12 mm. broad; surface white to plumbeous, puberulent, margin sulcate: lamellae concolorous: stipe subdiaphanous, glabrous, elongate, twisted, 8 cm. long, 2 mm. thick, clothed at the base with a weft of mycelium covering the surface of the wood.

TYPE LOCALITY: Cuba.
HABITAT: On rotten wood.
DISTRIBUTION: Jalapa, Vera Cruz; Cuba.

54. **Marasmius viridifuscus** Berk. & Curt. Jour. Linn. Soc. **10**: 295. 1868.

Pileus thin, plane, 12 mm. broad; surface pale-green, margin radiate-striate: lamellae green, broad, distant, decurrent: stipe blackish-brown below, glabrous, enlarged above, thin, 12 mm. long.

TYPE LOCALITY: Cuba.
HABITAT: On dead sticks in mountains.
DISTRIBUTION: Known only from the type locality.

55. **Marasmius Harrisii** Murrill, sp. nov.

Pileus rather thick, of medium size, convex to plane, slightly umbonate, conspicuously furrowed and folded on drying, solitary, 2–3 cm. broad; surface smooth, glabrous, isabelline, somewhat pruinose on the umbo: lamellae broad, ventricose, inserted, rather crowded, slightly interveined, adnate, cream-colored: spores ellipsoid, smooth, hyaline, granular, about 5×2.5 μ: stipe concolorous, fibrillose to glabrous, whitish-mycelioid at the base, about 3 cm. long and 2–3 mm. thick.

Type collected among dead leaves in woods in Troy and Tyre, Cockpit Country, Jamaica, January 12–14, 1909, *W. A. Murrill & W. Harris 85.1* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

56. **Marasmius cinereialbus** Murrill, sp. nov.

Pileus convex, gibbous, not fully expanding, cespitose, 2–3 cm. broad; surface subglabrous, faintly striate, at least when dry, grayish-white, isabelline or bay on drying, margin entire, concolorous, becoming strongly inflexed: lamellae adnexed or sinuate, often separating, crowded, narrow, arcuate, pallid to isabelline, sometimes bay in dried specimens: stipe long and slender, subequal, somewhat striate, especially at the apex, hollow, densely grayish-pulverulent, occasionally showing the blackish rind, mycelioid at the base, 4–8 cm. long, 1.5–2.5 mm. thick.

Type collected in leaf-mold and sticks at Rio Piedras, Porto Rico, September 8, 1912, *John R. Johnston 739* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

57. **Marasmius jalapensis** Murrill, sp. nov.

Pileus rather thick and opaque, hemispheric to subexpanded, slightly umbonate, at least when young, solitary, reaching 3 cm. broad; surface smooth but not polished, glabrous, sometimes exhibiting minute cracks in the cuticle on drying, not striate, isabelline to fulvous, bay on the umbo, margin entire, concolorous, usually much deflexed on drying: lamellae narrow, crowded, adnexed, pallid to isabelline, finely pubescent under a lens: spores subglobose to ovoid, smooth, hyaline, 5–7×4 μ: stipe inflated at the apex, hollow, smooth, glabrous, polished, light-bay above, chestnut-colored or brownish below, whitish-mycelioid at the base, sometimes twisted, at least when dry, reaching 6 cm. long and 2–3 mm. thick.

Type collected in leaf-mold on the ground in woods near Jalapa, Mexico, December 12–20, 1909, *W. A. & Edna L. Murrill 84* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from Vera Cruz.

58. **Marasmius obsoletus** Murrill, sp. nov.

Pileus conic to convex, with prominent hemispheric umbo, thin and much worn in appearance, which is more pronounced on drying, gregarious or subcespitose, reaching 2 cm. broad; surface cinereous to pale-isabelline, uneven, multistriate from the prominent umbo, which is considerably darker in moist weather, glabrous, margin very thin, soon becoming split or torn: lamellae adnate, narrow, of medium distance, arcuate, not interveined, white to pale-yellowish: stipe fuliginous when moist, grayish when dry, equal, densely and finely tomentose, yellowish-mycelioid at the base, twisted on drying, 5–7 cm. long, 1.5–2 mm. thick.

Type collected on dead wood at Rio Piedras, Porto Rico, December 25, 1911, *John R. Johnston 131* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Porto Rico.

59. **Marasmius putredinis** Berk. & Curt. Jour. Linn. Soc. **10**: 295. 1868.

Pileus plane, thin, 1.5–2.5 cm. broad; surface fulvous or gray, glabrous: lamellae white, adnate, narrow: spores hyaline: stipe glabrous, concolorous, equal, solid, 18 mm. long, 1 mm. thick.

TYPE LOCALITY: Cuba.

HABITAT: On rotten wood in forests.

DISTRIBUTION: Known only from the type locality.

60. **Marasmius coracicolor** Berk. & Curt. Jour. Linn. Soc. **10**: 294. 1868.

Pileus depressed or umbilicate, thin, soft, 18 mm. broad; surface fulvous, margin rugose-sulcate: lamellae concolorous, adnexed, crowded: spores gray in mass, reniform, minute: stipe rufescent, glabrous, sulcate, cartilaginous, 2.5 cm. long.

TYPE LOCALITY: Cuba.

HABITAT: On logs in woods.

DISTRIBUTION: Known only from the type locality.

61. **Marasmius pruinosifolius** Murrill, sp. nov.

Pileus convex, slightly umbilicate, opaque, solitary, 1.7 cm. broad; surface smooth, glabrous, isabelline, margin entire, incurved when young, lilac-colored: lamellae free, separating, attenuate at both ends, very narrow and crowded, cinereous with a rosy tint, many times inserted, not interveined, the edges distinctly pruinose: spores ellipsoid, smooth, hyaline, slightly curved on one side, 5–6.5×3–4.5 μ: stipe equal, compressed, somewhat distorted and twisted, cinereous with a rosy tint, finely pruinose, 3 cm. long, 5 mm. thick.

Type collected in soil in woods at Cinchona, Jamaica, December 25–January 8, 1908–9, *W. A. & Edna L. Murrill 506* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

62. **Marasmius cervinicolor** Murrill, sp. nov.

Pileus thin, depressed, cespitose, 1–2 cm. broad; surface glabrous, striate, fawn-colored, margin entire, concolorous: lamellae very narrow, crowded, subfree, pallid to subconcolorous: spores ellipsoid to slightly ovoid, smooth, hyaline, 7–8×4–5 μ: stipe slender, equal, concolorous or somewhat darker, finely and densely velvety-pruinose, slightly expanded at the base, 3–5 cm. long, 1–2 mm. thick.

Type collected on fallen decayed leaves at Castleton Gardens, Jamaica, October 28, 1902, *F. S. Earle 223* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

63. **Marasmius bahamensis** Murrill, sp. nov.

Pileus thin, opaque, convex to plane, gregarious to cespitose, 7–15 mm. broad; surface smooth, glabrous, radiate-rugose on drying, isabelline, slightly darker at the center, margin entire, concolorous: lamellae crowded, of medium breadth, adnexed, not interveined, white

or pallid: stipe slender, equal, whitish-pubescent to glabrous, very pale avellaneous, smooth, becoming polished, yellowish-mycelioid at the base, 4–5 cm. long, less than 1 mm. thick.

Type collected on fallen dead leaves and twigs, at Lake Cunningham, New Providence, Bahama Islands, September 8, 1904, *Elizabeth G. Britton 611* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

64. **Marasmius hemileucus** (Berk. & Curt.) Murrill.

Agaricus (*Collybia*) *hemileucus* Berk. & Curt. Jour. Linn. Soc. **10**: 285. 1868.

Pileus plane, orbicular, subcespitose, 2 cm. broad; surface fuscous, smooth, glabrous: lamellae adnate, crowded, white: stipe pulverulent, concolorous, 5–7 cm. long, 2 mm. thick.

TYPE LOCALITY: Cuba.
HABITAT: On dead leaves and sticks.
DISTRIBUTION: Cuba; New Providence, Bahamas.

65. **Marasmius montanus** Murrill, sp. nov.

Pileus convex to subexpanded, umbilicate or depressed, cespitose, 2–4 cm. broad; surface smooth, glabrous, very distinctly striate over the lamellae, rosy-isabelline to fulvous or bay, usually bay at the center, margin incurved when young, undulate: lamellae white or dirty-white, adnate or adnexed, narrow, of medium distance: spores ellipsoid, smooth, hyaline, granular, 5–7.5×3–4.5 μ: stipe cylindric, equal, sometimes curved, whitish-pulverulent to subglabrous, rosy-isabelline to bay, paler at the apex, 1.5–4 cm. long, 1–2 mm. thick.

Type collected on the decayed trunk of a tree-fern at Morce's Gap, Jamaica, December 29, 30, January 2, 1908, *W. A. & Edna L. Murrill 696* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Blue Mountains, Jamaica, above 1500 m.

66. **Marasmius fibrosipes** Berk. & Curt. Jour. Linn. Soc. **10**: 293. 1868.

Pileus subcoriaceous, thin, depressed, 4 cm. broad; surface fulvous, glabrous, margin inflexed, whitish: lamellae free, remote, rounded behind, crowded, narrow: spores hyaline: stipe thick, fibrous-squamose, white tinged with fuscous, solid, 2.5 cm. long, 4 mm. thick.

TYPE LOCALITY: Cuba.
HABITAT: On dead wood.
DISTRIBUTION: Known only from the type locality.

67. **Marasmius subpruinosus** Murrill, sp. nov.

Pileus convex, umbonate-depressed at the center, cespitose, reaching 7 cm. broad; surface rugose-striate, isabelline, smooth and pale-latericeous on the disk, finely pruinose under a lens even in age, margin thin, splitting easily, contorted on drying: lamellae adnate, rather broad, crowded, scarcely interveined, isabelline: spores globose, smooth, hyaline, 4–7 μ: stipe equal, cylindric or compressed, griseous, finely and persistently tomentose, about 5 cm. long and 3–5 mm. thick.

Type collected on a dead log in woods in Troy and Tyre, Cockpit Country, Jamaica, January 12–14, 1909, *W. A. Murrill & W. Harris 947* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

68. **Marasmius polyporoides** Murrill, sp. nov.

Pileus convex, not fully expanding, neither umbonate nor depressed, gregarious, 1–2 cm. broad; surface glabrous, smooth, except on the disk where it is rugose-reticulate, not at all striate, ferruginous, often becoming dull-bay on drying, margin thin, entire, concolorous, involute on drying: hymenium poroid, white, the principal lamellae being closely connected by transverse partitions; lamellae adnate, very thin, very narrow, arcuate, many times inserted: stipe slender, smooth, glabrous, shining, equal, chestnut to blackish, 4–5 cm. long, 1–1.5 mm. thick.

Type collected on leaf-mold in woods in British Honduras, October, 1906, *Morton E. Peck* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: British Honduras.

69. **Marasmius Berteroi** (Lév.) Murrill.

Heliomyces Berteroi Lév. Ann. Sci. Nat. III. 2: 177. 1844.

Pileus discoid, conspicuously radiate-sulcate, umbilicate, 4 cm. broad; surface glabrous, ferruginous: lamellae thin, distant, acutely adnate, pallid: stipe slender, sublignose, cylindric, smooth, glabrous, ferruginous to purple, 4 cm. long.

TYPE LOCALITY: Porto Rico.
HABITAT: On trunks of trees.
DISTRIBUTION: Throughout most of tropical North America.

70. **Marasmius badius** Berk. & Curt. Jour. Linn. Soc. **10**: 294. 1868.

Pileus convex, 12–18 mm. broad; surface glabrous, margin striate, incurved; lamellae slightly adnate, rounded behind, distant, ventricose, thick, interspaces smooth: stipe pruinose, glabrescent, thicker above and below, 2.5 cm. long, 2 mm. thick.

TYPE LOCALITY: Cuba.
HABITAT: On bark in moss.
DISTRIBUTION: Known only from the type locality.

71. **Marasmius haematocephalus** (Mont.) Berk. & Curt. Jour. Linn. Soc. **10**: 298. 1868.

Agaricus (Mycena) haematocephalus Mont. Ann. Sci. Nat. II. **8**: 369. 1837.
Marasmius rhodocephalus Fries, Nova Acta Soc. Sci. Upsal. III. **1**: 31. 1851.
Marasmius rhabarbarinus Berk. Jour. Bot. & Kew Misc. **8**: 135. 1856.
Marasmius floriceps Berk. & Curt. Jour. Linn. Soc. **10**: 298. 1868.
Marasmius hypophaeus Berk. & Curt. Jour. Linn. Soc. **10**: 298. 1868.
Marasmius phaeus Berk. & Curt. Jour. Linn. Soc. **10**: 298. 1868.
Marasmius sanguineus Cooke & Massee; Cooke, Grevillea **17**: 59. 1889.

Pileus membranous, convex or campanulate to expanded, usually umbonate, solitary or gregarious, 0.5–1.5 cm. broad; surface persistent purplish-red or fulvous-red, glabrous, more or less sulcate-striate, margin concolorous, entire to slightly crenate: lamellae few, distant, pallid, varying in breadth but usually rather narrow, attenuate-adnexed, rarely inserted, not interveined: stipe setiform, horny, glabrous, smooth, shining, pale-fuscous to reddish-brown, usually paler at the apex, 3–6 cm. long, 0.5–1 mm. thick.

TYPE LOCALITY: Rio de Janeiro, Brazil.
HABITAT: On fallen decayed leaves and wood.
DISTRIBUTION: Throughout tropical regions.
ILLUSTRATION: Mont. Pl. Cell. Cuba *pl. 17, f. 4.*

72. **Marasmius tageticolor** Berk. Jour. Bot. & Kew Misc. **8**: 136. 1856.

Pileus membranous, umbonate, solitary or gregarious, 5–20 mm. broad; surface smooth, glabrous, reddish or chestnut, marked with luteous rays over the lamellae, rugose on the umbo, margin concolorous, broadly dentate, resembling that of an open parasol: lamellae about 8 in number, ventricose, attenuate at both ends, luteous, with very broad, smooth interspaces: stipe capillary, pale-umbrinous, glabrous, 2.5–4 cm. long, 0.5 mm. thick.

TYPE LOCALITY: Panuré, Brazil.
HABITAT: On dead branches, leaves, and leaf-stalks.
DISTRIBUTION: St. Vincent, West Indies; also in Brazil.
ILLUSTRATION: Jour. Bot. & Kew Misc. 8: *pl. 5, f. 1.*

73. **Marasmius purpurascens** Berk. & Curt. Jour. Linn. Soc. **10**: 296. 1868.

Pileus thin, infundibuliform, 18 mm. broad; surface pale-purple, white when dry, finely tomentose, margin striatulate: lamellae concolorous, decurrent, very crowded, very narrow: stipe glabrous. 2.5 cm. long.

TYPE LOCALITY: Cuba.
HABITAT: On sticks in shady woods.
DISTRIBUTION: Known only from the type locality.

74. **Marasmius sericipes** Berk. & Curt. Jour. Linn. Soc. **10**: 294. 1868.

Pileus thin, convex, 18 mm. broad; surface vinous-rufous when dried, rugose: lamellae adnate, distant, narrow, interspaces smooth: stipe silky, glabrescent, rather thick, 2.5–3 cm. long, 2–4 mm. thick.

TYPE LOCALITY: Cuba.
HABITAT: On dead sticks in woods.
DISTRIBUTION: Known only from the type locality.

75. **Marasmius glaucopus** (Pat.) Sacc. & D. Sacc. in Sacc. Syll. Fung. **17**: 40. 1905.

Androsaceus glaucopus Pat.; Duss, Énum. Champ. Guad. 43. 1903.

Pileus campanulate-convex, 2 cm. broad; surface reddish-purple, velutinous, the disk venose-rugose, cells of cuticle red, erect, oblong-cylindric at the apex, margin involute, plicate-sulcate: lamellae blackish-purple, glaucous, unequal, not interveined, scarcely crowded, broad, narrowed at both ends: spores hyaline, ovoid, 8×5 μ; stipe dark-brownish-red, cylindric, cinereous-pruinate at the apex, hollow, tough, 3 cm. long, 3 mm. thick.

TYPE LOCALITY: Pointe-Noire, Guadeloupe.
HABITAT: On logs of *Chrysophyllum*.
DISTRIBUTION: Known only from the type locality.

76. **Marasmius ionides** Pat.; Duss, Énum. Champ. Guad. 45. 1903.

Pileus thin, submembranous, orbicular, from convex to plane, 2–6 cm. broad; surface opaque, glabrous, under a lens pulverulent, center sordid-violet, margin brownish, cuticle with thin-walled, rounded or ellipsoid cells, 20–50×20–30 μ, filled with brown or violet material: lamellae yellowish-white, narrow, distant, adnate, unequal: spores ovoid, colorless, thin-walled, 10×3 μ; basidia 30 μ long; cystidia cylindric, thin-walled, apex obtuse, 30–50×12–16 μ: stipe reddish, cylindric, thickly covered with white hairs, 2–4 cm. long, 1–3 mm. thick.

TYPE LOCALITY: Trois-Rivières, Guadeloupe.
HABITAT: On the ground in woods.
DISTRIBUTION: Known only from the type locality.

77. **Marasmius coracipes** Berk. & Curt. Jour. Linn. Soc. **10**: 294. 1868.

Pileus convex, thin, 12 mm. broad; surface pale-fuscous, smooth: lamellae pale-fulvous, narrow, crowded, adnexed, unequal: stipe concolorous, sulcate, glabrous, subeccentric, thick, 4 cm. long.

TYPE LOCALITY: Cuba.
HABITAT: In woods.
DISTRIBUTION: Known only from the type locality.

78. **Marasmius curtipes** Murrill, sp. nov.

Pileus convex to plane or slightly depressed, subcespitose, 1–2 cm. broad; surface brown when fresh, pale-brown or isabelline on drying, smooth, glabrous, slightly striate at times when dry, margin entire, concolorous: lamellae broad, thick, firm, not interveined, inserted, uneven, adnate or sinuate, isabelline: stipe unusually short for the size of the pileus, slightly grooved longitudinally, equal, pruinose to glabrous, gray or blackish, whitish-mycelioid at the base, rigid on drying, 6–10 mm. long, about 2 mm. thick.

Type collected on decaying roots in woods near Moneague, Jamaica, January 17–18, 1909, *W. A. Murrill 1128* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

79. **Marasmius cyathiformis** Berk. & Curt. Jour. Linn. Soc. **10**: 295. 1868.

Pileus cyathiform, cespitose, 18–25 mm. broad; surface brown when dry, glabrous: lamellae decurrent, distant: stipe dilated above, 2.5 cm. long, 1 mm. thick.

TYPE LOCALITY: Cuba.
HABITAT: On dead wood.
DISTRIBUTION: Known only from the type locality.

80. **Marasmius subcyathiformis** Murrill, sp. nov.

Pileus rather thin, convex to depressed, solitary to subcespitose, 1–1.7 cm. broad; surface pruinose to glabrous, not striate when moist, brownish with a violet tint, margin concolorous, strongly inflexed on drying: lamellae pallid, adnate, of medium distance, not interveined, inserted, narrow, some of them forking: stipe slender, equal, densely pruinose or finely tomentose, rarely becoming subglabrous near the middle and appearing brownish, usually twisted when dry, 2–4 cm. long, 1–1.5 mm. thick.

Type collected on fallen dead sticks in an orchard at Colima, Mexico, January 3–4, 1910, *W. A. & Edna L. Murrill 615* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Mexico.

81. **Marasmius Johnstonii** Murrill, sp. nov.

Pileus convex to plane, thin, opaque, gregarious, reaching 1–1.5 cm. broad; surface brown, fading to light-brown at times on drying and often becoming paler on the disk, finely pruinose to glabrous, finely whitish-tomentose at times on the disk, not striate, margin entire, concolorous, scarcely inflexed on drying: lamellae very close and narrow, many times inserted, not interveined, adnate to the enlarged apex of the stipe, white to pallid, the edges whitish-pruinose: stipe concolorous, very slender, equal, finely whitish-pubescent, not becoming glabrous, attached to the substratum by an expanding mat of mycelium, 2–3 cm. long, 1 mm. thick.

Type collected on fallen dead leaves at Rio Piedras, Porto Rico, May 25, 1913, *John R. Johnston 912* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from a few collections in the type locality.

82. **Marasmius polyphyllus** Peck, Ann. Rep. N. Y. State Mus. **51**: 286. 1898.

Pileus fleshy, thin, convex or nearly plane, gregarious or cespitose, 2.5–5 cm. broad; surface smooth, whitish to pale-reddish-brown, the disk darker in dried plants: context having the odor and taste of onions; lamellae adnexed or nearly free, very crowded, narrow, white, becoming yellowish in dried plants: spores minute, 5–6 × 3–4 μ: stipe equal, hollow, 4–7 cm. long, 2–4 mm. thick, reddish-brown, covered with a white tomentum which is more abundant toward the base.

TYPE LOCALITY: New York.
HABITAT: Shaded, damp ground.
DISTRIBUTION: New York.

83. **Marasmius prasiosmus** Fries, Epicr. Myc. 376. 1838.

Agaricus prasiosmus Fries, Obs. Myc. 2: 153. 1818.

Pileus submembranous, soft, campanulate, convex, expanded, obtuse, gregarious, 2–4 cm. broad; surface rugulose-sulcate, glabrous, whitish or yellowish, the disk darker: context having a strong odor of onions; lamellae attached, subcrowded, narrow, white: spores white, 12–15 × 3–4 μ: stipe fistulose, pallid, glabrous above, subtomentose and thickened downward, pallid, then rufous or fuscous, 5–8 cm. long, 2 mm. thick.

TYPE LOCALITY: Sweden.
HABITAT: Upon old leaves in woods.
DISTRIBUTION: Temperate North America; also in Europe.
ILLUSTRATIONS: Cooke, Brit. Fungi *pl. 1120 (1074)*; Gill. Champ. Fr. *pl. 200 (447)*.
EXSICCATI: ?Rav. Fungi Am. *468* (as *M. alliaceus* Fries).

84. **Marasmius confluens** (Pers.) Ricken, Blätterp. Deutschl. 72. 1911.

Agaricus confluens Pers. Syn. Fung. 368. 1801.
Collybia confluens Fries, Epicr. Myc. 88. 1838.

Pileus subfleshy, dry, broadly convex to plane, cespitose, 1.5–3.5 cm. broad; surface smooth, pinkish-brown, becoming yellowish-brown or almost white in dry plants; margin thin, often involute even in old, dried plants: lamellae narrow, crowded, free, remote, white or slightly discolored in age: spores 7–8 × 3–3.5 μ: stipe equal, enlarged at the apex, hollow,

brown, covered everywhere with dense white tomentum, the bases of several plants bound together with dense whitish mycelium, 4–12 cm. long, 2–5 mm. thick.

TYPE LOCALITY: France.
HABITAT: Among dead leaves or moss.
DISTRIBUTION: New York, Ohio, and Michigan; also in Europe.
ILLUSTRATIONS: Britz. Hymen. Sudb. *pl. 9, f. 4;* Hard, Mushrooms *f. 84;* Pat. Tab. Fung. *f. 634*; Ricken, Blätterp. Deutschl. *pl. 24, f. 2.*

85. **Marasmius archyropus** (Pers.) Fries, Epicr. Myc. 378. 1838.

Agaricus archyropus Pers. Myc. Eur. **3**: 135. 1828.

Pileus subfleshy, tough, convex to plane and depressed, gregarious or cespitose by the union of several plants by masses of mycelium at the base, 2–3 cm. broad; surface alutaceous, pallescent, often becoming nearly white, glabrous; margin thin, involute, except in the mature plants, even, smooth: context moderately thin, tough, whitish; lamellae white, yellowish when dry, adnexed, crowded, narrow: spores 8 × 4 μ: stipe pale-reddish, usually appearing gray or white with a pruinose or tomentose coat, firm, rigid, stuffed or hollow, 11–14 cm. long, 2–3 mm. thick.

TYPE LOCALITY: France.
HABITAT: Among leaves in woods.
DISTRIBUTION: Temperate North America; also in Europe.
ILLUSTRATIONS: Britz. Hymen. Sudb. Marasm. *f. 7, 42;* Cooke, Brit. Fungi *pl. 1122 (1076) B;* Gill. Champ. Fr. *pl. 440;* Pers. Myc. Eur. **3**: *pl. 25, f. 4;* Trans. Brit. Myc. Soc. **1905**: *pl. 12, f. 1;* Ricken, Blätterp. Deutschl. *pl. 24, f. 7.*

86. **Marasmius multifolius** Peck, sp. nov.

Pileus subfleshy, tough, convex to plane, 2–3 cm. broad; surface smooth, not striate, isabelline to pale-fulvous, not fading in dry plants: lamellae narrow, crowded, adnate, white, changing but little in dry plants: spores 6 × 2.5–3 μ: stipe white-villous, firm, stuffed or hollow, 4–6 cm. long, 2 mm. thick.

Type collected on dead leaves in woods at Minerva, New York (herb. N. Y. State Mus.).
DISTRIBUTION: New England and New York.

87. **Marasmius washingtonensis** Pennington, sp. nov.

Pileus subfleshy, tough, hemispheric or broadly convex, umbonate, densely cespitose, 1.5–2 cm. broad; surface smooth, even, whitish, margin striate: lamellae adnate, sinuate, narrow, subcrowded, whitish or skin-colored: spores 6 × 3 μ: stipe hollow, even, reddish or reddish-brown, smooth above, bound together below with dense white mycelium, 3–5 cm. long, 2 mm. thick.

Type collected upon decaying wood near Seattle, Washington, October 20–November 1, 1911, *W. A. Murrill* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

88. **Marasmius fasciatus** Pennington.

Marasmius anomalus Peck, Ann. Rep. N. Y. State Mus. **24**: 76. 1872. Not *M. anomalus* Lasch, 1854.

Pileus subfleshy, tough, broadly convex to nearly plane, often subumbonate, densely cespitose, 2–4 cm. broad; surface even, glabrous, reddish to tan, fading nearly to white in dried plants: lamellae rather close, narrow, adnexed, narrowed behind, white, sometimes reddish-yellow in dried plants: spores 5–6 × 2.5–3 μ: stipe cartilaginous, even, hollow, smooth above, bound together below by dense white mycelium, reddish to dark-red or almost black, 3–6 cm. long, 2–3 mm. thick.

TYPE LOCALITY: Catskill Mountains, New York.
HABITAT: Upon decaying wood in forests.
DISTRIBUTION: New York to Michigan.
EXSICCATI: Herpell, Präp. Hutpilze *111.*

89. **Marasmius iocephalus** (Berk. & Curt.) Pennington.

Agaricus (Mycena) iocephalus Berk. & Curt. Ann. Mag. Nat. Hist. II. **12**: 420. 1853.

Pileus submembranous to membranous, broadly convex, gregarious or subcespitose, 1.5–4 cm. broad; surface striate or sulcate, violet, bluish-gray at times in dried plants: context having a strong odor; lamellae adnate, distant, rather narrow, paler than the pileus: spores 7 × 3.5 μ: stipe attenuate upward, densely tomentose above, strigose below, white or yellowish, 4–5 cm. long, 2–4 mm. thick.

TYPE LOCALITY: South Carolina.
HABITAT: Upon leaves in woods or swamps.
DISTRIBUTION: New York to Alabama.

90. **Marasmius peronatus** (Bolt.) Fries, Epicr. Myc. 375. 1838.

Agaricus peronatus Bolt. Hist. Fung. 58. 1788.

Pileus subfleshy, tough, broadly convex, sometimes subumbonate, 2–6 cm. broad; surface rich-brown with a reddish tint in dried plants, glabrous; margin lighter than the disk, smooth, somewhat irregular: context tough, coriaceous, whitish, the taste unpleasant, acrid; lamellae pallid to reddish, close, rather broad, adnexed: spores ovoid, 6–8 × 3–4 μ: stipe flavid to subrufous, equal, often compressed, villous-corticate, peronate-strigose at the base.

TYPE LOCALITY: England.
HABITAT: Upon dead leaves in woods.
DISTRIBUTION: New York and California; also in Europe.
ILLUSTRATIONS: Bolt. Hist. Fung. *pl. 58;* Cooke, Brit. Fungi *pl. 1117 (1070)*; Cordier, Champ. Fr. *pl. 14, f. 2;* E. & P. Nat. Pfl. 1^{1**}: *f. 113, H;* Gill. Champ. Fr. *pl. 445;* Lanzi, Funghi Mang. *pl. 13, f. 2;* Pat. Tab. Fung. *pl. 411;* Richon & Roze, Atl. Champ. *pl. 49, f. 5–10;* Ricken, Blätterp. Deutschl. *pl. 25, f. 1;* Sow. Engl. Fungi *pl. 37*.
EXSICCATI: Herpell, Präp. Hutpilze *52;* Roum. Fungi Sel. *7238;* Sydow, Myc. Mar. *305*.

91. **Marasmius subnudus** (Ellis) Peck, Ann. Rep. N. Y. State Mus. **51**: 287. 1898.

Marasmius peronatus subnudus Ellis, N. Am. Fungi *909*. 1883.

Pileus subfleshy, thin, tough, flexuous, broadly convex to plane, gregarious or subcespitose, 2–4 cm. broad; surface brownish-red, dingy-bay, or russet, smooth, margin even, smooth or substriate: context thin, tough, white, the taste unpleasant, bitter; lamellae pallid or yellowish, becoming darker in dried plants, narrow, subdistant, slightly adnexed or free, becoming remote in old, dried plants: spores 8–10 × 4.5 μ: stipe reddish-brown to nearly black, covered with a dense, white tomentum or nearly naked at the apex, slender, firm, equal, solid or stuffed, 4–8 cm. long, 2–4 mm. thick.

TYPE LOCALITY: New Jersey.
HABITAT: On the ground among leaves, twigs, etc., in woods.
EXSICCATI: Ellis, N. Am. Fungi *909*.

92. **Marasmius rubrophyllus** Pennington, sp. nov.

Pileus subfleshy, tough, broadly convex to nearly plane, often slightly depressed, gregarious, 1–4 cm. broad; surface dry, smooth, reddish-brown to dark-alutaceous, margin even: lamellae adnexed or adnate, moderately close, narrow, reddish, becoming reddish-brown in dried plants: spores 7 × 3.5 μ: stipe firm, even, short, reddish-brown, uniformly covered with a white down or pruinose coat, 2–3 cm. long, 1–2.5 mm. thick.

Type collected upon bark at the base of a white oak tree in the forest near Ann Arbor, Michigan, September, 1907, *L. H. Pennington* (herb. Pennington).
HABITAT: On bark, dead leaves, and dead twigs in woods.
DISTRIBUTION: Temperate North America east of the Mississippi River.

93. **Marasmius caryophylleus** (Schaeff.) Schröt. Krypt.-Fl. Schles. **3**^{1}: 561. 1889.

Agaricus caryophyllaeus Schaeff. Fung. Bavar. **4**: Ind. 33. 1774.
Agaricus oreades Bolt. Hist. Fung. 151. 1791.
Marasmius oreades Fries, Epicr. Myc. 375. 1838.
Scorteus oreades Earle, Bull. N. Y. Bot. Gard. **5**: 415. 1909.

Pileus fleshy, tough, convex, plane or subumbonate, 3–5 cm. broad; surface white to pale-tan or reddish-pallescent, glabrous; margin at first involute, smooth, even, sometimes reflexed

in age or in dried plants: context somewhat tough, thick at the disk, whitish, the taste pleasant, the odor fragrant; lamellae white, yellowish when dry, broad, distant, free: spores 7–9 × 4–5 μ: stipe pallid, equal, solid, corticate, with a villous, interwoven cuticle, appearing nearly smooth or slightly villous-pubescent, 4–5 cm. long, 2–4 mm. thick.

TYPE LOCALITY: Bavaria.
HABITAT: Grassy places.
DISTRIBUTION: Temperate North America; also in Europe.
ILLUSTRATIONS: Atk. Stud. Am. Fungi *f. 129;* Bolt. Hist. Fung. *pl. 151;* Boyer, Champ. *pl. 38;* Bres. Funghi Mang. *pl. 84;* Bull. Herb. Fr. *pl. 144, pl. 528, f. 2;* Bernard, Champ. Roch. *pl. 43, f. 2;* Cooke, Brit. Fungi *pl. 1118 (1072)*; Cordier, Champ. Fr. *pl. 14, f. 3;* E. & P. Nat. Pfl. **1**^{1**}: *f. 113, G;* F. Lorinser, Essb. Schwämme *pl. 8, f. 3;* Fries, Sv. Aetl. Svamp. *pl. 31;* Gill. Champ. Fr. *pl. 202 (444)*; Hahn, Pilz-Samml. ed. 2. *pl. 12, f. 62;* Hard, Mushrooms *pl. 191–192;* Harzer, Abbild. Pilze *pl. 17, b;* Lanzi, Funghi Mang. *pl. 45, f. 3;* Krombh. Abbild. *pl. 6, f. 16;* Mycologia **2**: *pl. 19, f. 3;* Palmer, Mushr. Am. *pl. 3;* Pat. Tab. Fung. *pl. 328;* Paulet, Traité Champ. **3**: *pl. 103, f. 1–4;* Ricken, Blätterp. Deutschl. *pl. 24, f. 5;* Richon & Roze, Atl. Champ. *pl. 50, f. 1–3;* Schaeff. Fung. Bavar. *pl. 77;* Sow. Engl. Fungi *pl. 247.*
EXSICCATI: Cavara, Fungi Longob. *19;* D. Sacc. Myc. Ital. *1402;* Ellis & Ev. Fungi Columb. *701;* Ellis, N. Am. Fungi *908;* Herpell, Präp. Hutpilze *72;* Rab.-Wint. Fungi Eur. *301;* Roum. Fungi Gall. *2002;* Shear, N. Y. Fungi *21;* Sydow, Myc. Mar. *1401, 1402;* Thüm. Fungi Austr. *610, 610b;* Thüm. Myc. Univ. *303;* Underw. & Cook, Illust. Fungi *4.*

94. **Marasmius spongiosus** Berk. & Curt.; Berk. Jour. Bot. & Kew Misc. **1**: 100. 1849.

Marasmius semisquarrosus Berk. & Cooke; Cooke, Grevillea **6**: 129. 1878.

Pileus fleshy, broadly convex, obtuse or plane, 1–3 cm. broad; surface whitish-fuscous, whitish-brown, or tan, the center darker: lamellae slightly adnate, subcrowded, moderately broad, whitish: spores 7–9 × 3–4 μ: stipe 5–10 cm. long, 2–4 mm. thick, furfuraceous-pulverulent to villous, the base thickened, more or less spongy, tawny to dark-brown or almost black, often rooting, the rooting portion being 3–5 cm. long.

TYPE LOCALITY: Gainesville, Florida.
HABITAT: Debris in woods.
DISTRIBUTION: New York to Florida and west to Ohio.
ILLUSTRATIONS: Cooke, Brit. Fungi *pl. 1123 (1077) B;* Fries, Ic. Hymen. *pl. 174, f. 2* (as *Marasmius erythropus*).
EXSICCATI: Ellis & Ev. Fungi Columb. *601;* Ellis, N. Am. Fungi *912;* Rav. Fungi Car. **3**: *7;* Rav. Fungi Am. *106.*

95. **Marasmius dichrous** Berk. & Curt. Ann. Mag. Nat. Hist. II. **12**: 426. 1853.

Marasmius caespitosus Peck, Bull. Buffalo Soc. Nat. Sci. **1**: 58. 1873.
Marasmius fagineus Morgan, Jour. Cinc. Soc. Nat. Hist. **6**: 192. 1883.

Pileus subfleshy, convex, at length plane or depressed, 2–4 cm. broad; surface not polished, dry, nearly smooth to rugose-striate, reddish or purplish-pallid to alutaceous, becoming brown in dried plants: lamellae adnate, often becoming nearly free, close, narrow in front, often crisped, pale-reddish: spores often guttulate, 8–10 × 4.5–5 μ: stipe short, hollow, thickened upward, reddish-pallid, brown, or dark-reddish-brown, pruinose or slightly pubescent at the subtuberculose base, 1–3 cm. long, 2 mm. thick.

TYPE LOCALITY: South Carolina.
HABITAT: Upon twigs, bark, wood, etc., in woods.
DISTRIBUTION: New England to South Carolina and west to the Central States.

96. **Marasmius fuscopurpureus** (Pers.) Fries, Epicr. Myc. 377. 1838.

Agaricus fuscopurpureus Pers. Ic. Descr. Fung. 12. 1798.

Pileus tough, fleshy, convex to plane or subumbilicate, 3–5 cm. broad; surface smooth, dark-purplish-brown, becoming yellowish or alutaceous in dry plants, margin slightly furrowed or striate: context mild; lamellae subdistant, rather thick, adnexed to adnate, often separating from the stipe, reddish: spores 8–10 × 4 μ: stipe even or thickened downward, dark-purplish or reddish-brown, nearly smooth above, reddish-brown-strigose below, 5–8 cm. long, 3–4 mm. thick.

TYPE LOCALITY: France.
HABITAT: Upon leaves in woods.
DISTRIBUTION: Rhode Island, Ohio, Colorado, and probably Minnesota; also in Europe.
ILLUSTRATIONS: Pers. Ic. Descr. Fung. *pl. 4, f. 1–3;* Ricken, Blätterp. Deutschl. *pl. 24, f. 1.*
EXSICCATI: Clements, Crypt. Form. Colo. *367.*

97. **Marasmius Sutliffae** Peck, Bull. Torrey Club **32**: 78. 1905.

Pileus thin, tough, subcampanulate or convex, 1–2 cm. broad; surface glabrous, shining when moist, reddish-brown, often darker at the center, the red color fading out in dried plants: context having a bitter taste; lamellae broad, moderately close, subventricose, adnexed, white, often with a pinkish tint, interspaces venose: spores ellipsoid, often guttulate, 8–10 × 5–6 μ: stipe slender, cartilaginous, hollow, pallid, glabrous or slightly pruinose above, abundantly white-tomentose at the base, 2.5–4 cm. long, 2–3 mm. thick.

TYPE LOCALITY: Sacramento, California.
HABITAT: Upon lawns in shaded places.
DISTRIBUTION: Known only from the type locality.

98. **Marasmius trullisatipes** Peck, Bull. N. Y. State Mus. 167: 44. 1913.

Pileus thin, subfleshy, campanulate or convex, acutely umbonate, 12–20 mm. broad; surface glabrous, isabelline or subrufescent, the umbo often blackish in dried plants: lamellae adnate, rather close, thin, broad anteriorly, whitish tinged with pink: spores 6 × 4 μ: stipe tough, solid, radicating, externally cartilaginous, brownish, white within, pruinose above, tomentose below, 3–5 cm. long, 2–3 mm. thick.

TYPE LOCALITY: Minnesota.
HABITAT: Upon the ground.
DISTRIBUTION: Ohio and Minnesota.

99. **Marasmius umbonatus** Peck, Bull. Buffalo Soc. Nat. Sci. 1: 58. 1873.

Pileus thin, tough, expanded, umbonate, gregarious, 13–19 mm. broad; surface glabrous, alutaceous, margin smooth or substriate, at first incurved: lamellae interveined, branched in front, reaching the stipe, subdistant, narrow, white: spores 7–8 × 3.5 μ: stipe equal, solid, fulvous above, pallid below, velvety-tomentose, 2.5–4 cm. long, 1 mm. thick.

TYPE LOCALITY: North Elba, New York.
HABITAT: Ground under conifers.
DISTRIBUTION: Adirondack Mountains, New York.

100. **Marasmius foetidus** (Sow.) Fries, Epicr. Myc. 380. 1838.

Merulius foetidus Sow. Engl. Fungi *pl. 21.* 1796.
Agaricus venosus Pers. Syn. Fung. 467. 1801.
Marasmius acerinus Peck, Bull. N. Y. State Mus. **5**: 648. 1899.

Pileus submembranous, soft, convex, then explanate, umbilicate, 10–20 mm. broad; surface subpruinose, fulvobadious or fox-brown, fading in dry plants; margin striate-plicate, at first involute, lax or drooping: context having a strong, disagreeable odor; lamellae annulate-adnexed, not broad, distant, reddish-yellow: spores 7–8 × 4 μ: stipe pruinose, minutely floccose at the base, hollow, spadiceous. darker below, 1–2.5 cm. long, 2 mm. thick.

TYPE LOCALITY: England.
HABITAT: Fallen twigs, leaves, etc.
DISTRIBUTION: Temperate North America; also in Europe.
ILLUSTRATIONS: Boud. Ic. Myc. 1: *pl. 73;* Britz. Hymen. Sudb. Marasm. *f. 30;* Bernard, Champ. Roch. *pl. 43, f. 2;* Cooke, Brit. Fungi *pl. 1134 (1081) A;* Gill. Champ. Fr. *pl. 442;* Hard, Mushrooms *f. 104;* Sow. Engl. Fungi *pl. 21.*
EXSICCATI: Rab.-Wint. Fungi Eur. *3532;* Roum. Fungi Gall. *3701;* Cooke, Fungi Brit. *405* (as *M. impudicus* Fries).

101. **Marasmius Copelandi** Peck, Bull. Torrey Club **31**: 182. 1904.

Pileus thin, tough, broadly convex, 1–2 cm. broad; surface glabrous, tawny: context having a strong and unpleasant mephitic taste and odor; lamellae few, adnate, distant, pallid:

spores subfusiform, 12–15 × 4 μ: stipe slender, tough, hollow, velvety-pubescent and brown below, less densely pubescent and paler above, 4–6 cm. long, 1–2 mm. thick.

TYPE LOCALITY: Woodside, California.
HABITAT: Upon dead leaves of *Quercus densiflora*.
DISTRIBUTION: Washington, Oregon, and California.

102. **Marasmius elongatipes** Peck, Bull. Buffalo Soc. Nat. Sci. 4: 181. 1883.

Marasmius longipes Peck, Ann. Rep. N. Y. State Mus. **26**: 66. 1874. Not *M. longipes* Mont. 1854.
Marasmius hirtipes Clements, Bot. Surv. Neb. **4**: 20. 1896.

Pileus thin, submembranous, convex, 8–13 mm. broad; surface glabrous, finely striate, fulvous-red: lamellae narrow, adnexed, not crowded, white: spores 7–8 × 3.5 μ: stipe equal, long, slender, radicate, hollow, brown or alutaceous, white and pruinose to white-tomentose at the apex, 5–13 cm. long, 1 mm. thick.

TYPE LOCALITY: New York.
HABITAT: Upon ground among leaves.
DISTRIBUTION: New England to Virginia and west to the Mississippi Valley.

103. **Marasmius semihirtipes** Peck, Bull. Buffalo Soc. Nat. Sci. 1: 57. 1873.

Pileus thin, tough, convex to nearly plane or depressed, 1–2 cm. broad; surface glabrous, reddish-brown, becoming alutaceous, the disk darker, margin sometimes striate: lamellae slightly adnexed, subdistant, not narrow, white: spores 8–9 × 4.5 μ: stipe equal, even or finely striate, tubular, reddish-brown, often nearly black in dry plants, glabrous above, velvety-tomentose toward the base, 3–5 cm. long, 1–2 mm. thick.

TYPE LOCALITY: West Point, New York.
HABITAT: Upon ground among fallen leaves, twigs, etc.
DISTRIBUTION: New England to Virginia and west to Minnesota, Missouri, and Colorado.

104. **Marasmius castaneicolor** Pennington, sp. nov.

Pileus submembranous, broadly convex to plane and slightly depressed, 8–14 mm. broad; surface smooth, even, dry, brown or chestnut: lamellae adnexed, rather close, not broad, white, becoming only slightly yellow in dried plants: spores 7 × 3.5 μ; cystidia 15–18 × 2.5–3 μ: stipe white-pruinose to tomentose, often tawny at the base, 2–3 cm. long, 1–1.5 mm. thick.

Type collected on dead oak leaves at St. Martinsville, Louisiana, July 24, 1888, *A. B. Langlois 1426* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Louisiana.

105. **Marasmius biformis** Peck, Bull. N. Y. State Mus. 67: 25. 1903.

Marasmius longistriatus Peck, Bull. N. Y. State Mus. 105: 25. 1906.

Pileus submembranous, thin, campanulate or nearly plane, often becoming umbilicate, gregarious, 8–16 mm. broad; surface glabrous, hygrophanous, striatulate when moist, rugose-striate when dry, bay-red or pale-chestnut when moist, grayish when dry: lamellae adnate and joined together at the stipe, rather close, not broad, grayish or creamy-yellow: spores 5–6 × 3.5–4 μ: stipe even, slender, brown when moist, cinereous when dry, densely downy-pubescent, the base often tawny, 2.5 cm. long, 1 mm. thick.

TYPE LOCALITY: Sandlake, New York.
HABITAT: Upon ground among coniferous trees.
DISTRIBUTION: New York, Michigan, and Ohio.
ILLUSTRATIONS: Bull. N. Y. State Mus. 105: *pl. S, f. 1–4.*

106. **Marasmius contrarius** Peck, Bull. N. Y. State Mus. 150: 34. 1911.

Pileus submembranous, tough, broadly convex or nearly plane, gregarious, 4–10 mm. broad; surface often uneven, glabrous, whitish or white with brown center, becoming grayish

or subalutaceous in drying: lamellae adnate or slightly decurrent, subdistant, thin, sometimes branched or irregular, the interspaces slightly venose, whitish: spores 7–9 × 4–5 μ: stipe slender, white within, solid, grayish-tawny, downy, tomentose at the base, 2–3 cm. long, 1–1.5 mm. thick.

TYPE LOCALITY: North Elba, New York.
HABITAT: Damp, mossy places under spruce and balsam trees.
DISTRIBUTION: Adirondack Mountains, New York.

107. **Marasmius velutipes** Berk. & Curt. Ann. Mag. Nat. Hist. III. **4**: 294. 1859.

Pileus submembranous, tough, plane or subumbilicate, gregarious, 8–20 mm. broad; surface dull-chestnut to ochraceous-brown, lighter or pallescent at the center, smooth; margin at first involute, thin, even, smooth, often becoming striate: context thin, tough, white or whitish; lamellae white, becoming yellowish, narrow, close, adnate: spores 6.5 × 4–4.5 μ: stipe reddish-brown, covered above with whitish tomentum, below with tawny-yellow to brown hairs, flexuous, equal or swollen and spongy below, hollow, often rooting, 3–5 cm. long, 1–2 mm. thick.

TYPE LOCALITY: Eastern United States.
HABITAT: Among dead leaves of deciduous trees.
DISTRIBUTION: New England to the Carolinas and west to the Mississippi Valley.

108. **Marasmius subtomentosus** Peck, Bull. Torrey Club **22**: 487. 1895.

Pileus thin or subfleshy, subcampanulate or nearly plane, 1–2 cm. broad; surface smooth or minutely tomentose-pubescent, gray or reddish-gray, margin scarcely striate: lamellae free or scarcely adnexed, subdistant, broad, ventricose, concolorous: spores 10–13 × 5–6 μ: stipe equal or thickened at the base, gray or gray-brown, white within, silky-tomentose, 2.5 cm. long, 2 mm. thick.

TYPE LOCALITY: Kansas.
HABITAT: Grass roots.
DISTRIBUTION: Kansas.

109. **Marasmius subpilosus** Peck, Bull. Torrey Club **30**: 95. 1903.

Pileus thin, convex or nearly plane, 1–2 cm. broad; surface even or rugulose at the center, minutely pruinose-pubescent, whitish with brown center, often tinged with yellow; margin striate: lamellae rather broad, ventricose, adnate, subsinuate, not close, the edges minutely ciliate: spores 8 × 2.5–3 μ; cystidia 30–40 × 7–15 μ: stipe slender, stuffed or hollow, reddish-brown, white at the apex, pruinose-pubescent above, gray-tomentose below, 3–5 cm. long, 1 mm. thick.

TYPE LOCALITY: Idaho.
HABITAT: Upon leaves and branches in wet woods.
DISTRIBUTION: Western states.

110. **Marasmius magnisporus** Murrill, Mycologia **4**: 166. 1912.

Marasmius salignus major Peck, Ann. Rep. N. Y. State Mus. **41**: 85. 1888.

Pileus thin, tough, convex, at times umbonate, cespitose or closely gregarious, 1–1.5 cm. broad; surface glabrous, white to pale-isabelline with a pinkish tint; margin sometimes slightly striate: context mild; lamellae squarely adnate or decurrent, distant, broad, strongly interveined, inserted, white, entire: spores oblong, 10–12 × 4–6 μ: stipe increasing upward, tough, grayish-avellaneous below, paler above, minutely striate, pruinose to glabrous, 1–3 cm. long, 2 mm. thick.

TYPE LOCALITY: New York Botanical Garden, New York.
HABITAT: Upon dead wood.
DISTRIBUTION: Temperate North America.
ILLUSTRATIONS: Hard, Mushrooms *f. 107*; Mycologia **4**: *pl. 68, f. 7*.

111. **Marasmius papillatus** Peck, Ann. Rep. N. Y. State Mus. **24**: 76. 1872.

Pileus submembranous, convex to expanded, papillate, gregarious, 1–2 cm. broad; surface obscurely striate, sordid-white or gray, sometimes with a pink tint; margin fluted in dry plants: lamellae adnate with slightly decurrent tooth, some decidedly decurrent, crowded, narrow, white or yellowish: spores 8–9 × 3.5 μ: stipe slender, deeply radicating, firm, hollow, concolorous, white-pruinose, 2.5–5 cm. long, 1–2 mm. thick.

TYPE LOCALITY: Sandlake, New York.
HABITAT: Upon mossy logs.
DISTRIBUTION: New York.

112. **Marasmius languidus** (Lasch) Fries, Epicr. Myc. 379. 1838.

Agaricus languidus Lasch, Linnaea **3**: 385. 1828.

Pileus subfleshy, convex, gibbous or umbilicate, 1–2 cm. broad; surface flocculose, white, pallid, margin rugose-sulcate: lamellae adnate-decurrent, interveined, distant, narrow: spores 6 × 4 μ: stipe increased above, stuffed, pallid, brownish below, surface naked, 2.5 cm. long, 1–2 mm. thick.

TYPE LOCALITY: Brandenburg, Germany.
HABITAT: Upon stems, grass, leaves, etc.
DISTRIBUTION: New England and probably in Minnesota; also in Europe.
ILLUSTRATIONS: Cooke, Brit. Fungi *pl. 1126 (1080) C*; Pat. Tab. Fung. *f. 413.*

113. **Marasmius vialis** Peck, Ann. Rep. N. Y. State Mus. **51**: 287. 1898.

Pileus membranous, convex, 4–10 mm. broad; surface pruinose, white: lamellae decurrent, distant, arcuate, white, becoming yellow-brown in dried plants: spores 7–9 × 4–4.5 μ: stipe bulbous, short, solid, tough, white-pruinose, white then brown or black within, 12–20 mm. long, 1 mm. thick.

TYPE LOCALITY: Gansevoort, New York.
HABITAT: Damp ground, roadsides, etc.
DISTRIBUTION: New York to Alabama.

114. **Marasmius resinosus** (Peck) Sacc. Syll. Fung. **5**: 522. 1887.

Marasmius decurrens Peck, Ann. Rep. N. Y. State Mus. **24**: 77. 1872.
Marasmius resinosus niveus Peck, Bull. N. Y. State Mus. 67: 38. 1903.
Marasmius resinosus candidissimus Peck, Bull. N. Y. State Mus. 94: 40. 1905.

Pileus thin, convex, subcespitose, 8–13 mm. broad; surface minutely tomentose, pure-white, becoming yellowish when dry: lamellae arcuate-decurrent, venose-connected, subdistant, narrow, tapering toward each end, white, the edges discolored: spores 6–7 × 4 μ: stipe slender, firm, equal, white, minutely tomentose, 2.5–5 cm. long, 1 mm. thick. The stipe and lamellae are usually dotted with minute, resinous, granular particles.

TYPE LOCALITY: Albany, New York.
HABITAT: Vegetable debris upon the ground.
DISTRIBUTION: New York to Virginia and west to Michigan and Ohio.

115. **Marasmius salignus** Peck, Ann. Rep. N. Y. State Mus. **35**: 135. 1884.

Pileus submembranous, convex or plane, 4–10 mm. broad; surface dry, glabrous or subpruinose, white; margin even: lamellae often joined at the base, rarely forking, adnate, subdistant, narrow, white: spores ovoid or subellipsoid, 6–7 × 4 μ: stipe slender, stuffed, reddish-brown, slightly furfuraceous or pruinose, 1.5–2.5 cm. long, 1 mm. thick.

TYPE LOCALITY: Bethlehem, New York.
HABITAT: Bark of trees.
DISTRIBUTION: New York and Pennsylvania.

116. **Marasmius squamula** (Batsch) Pennington.

Agaricus squamula Batsch, Elench. Fung. Contin. 1: 95. 1786.
Helotium melanopus Pers. Ic. Descr. Fung. 36. 1800.
?*Agaricus epiphyllus* Pers. Syn. Fung. 468. 1801.
Marasmius epiphyllus Fries, Epicr. Myc. 386. 1838.
Marasmius subvenosus Peck, Ann. Rep. N. Y. State Cab. **23**: 125. 1872.

Pileus membranous, plane, at length subumbilicate, 2–10 mm. broad; surface plicate, rugose, milk-white, often becoming light-brown in age, margin not striate: lamellae adnate, few, rather narrow, often vein-like, distant, venose-connected, white: spores 8–9 × 3 μ; cystidia awl-shaped, 25–30 × 5 μ: stipe equal, inserted, horny, fistulose, brown below, light above, pruinose or very slightly velvety, 2-5 cm. long, 0.5–1 mm. thick.

TYPE LOCALITY: England.
HABITAT: Upon leaves, sticks, etc.
DISTRIBUTION: Temperate North America; also in Europe.
ILLUSTRATIONS: Bull. Herb. Fr. *pl. 601, f. 2;* Cooke, Brit. Fungi *pl. 1137 (1088) A*; Sow. Engl. Fungi *pl. 93;* Pers. Ic. Descr. Fung. **2**: *pl. 9, f. 7, 8* (as *Helotium melanopus*).
EXSICCATI: Cooke, Fungi Brit. *407;* Desmaz. Pl. Crypt. *1413;* Ellis, Ev. & Barth. Fungi Columb. *2231;* Rab.-Wint. Fungi Eur. *1204;* Roum. Fungi Gall. *3624;* Sydow. Myc. Mar. *202;* Thüm. Fungi Austr. *609;* Westend. Herb. Crypt. Belge *586;* Beck & Zahlbr. Krypt. *303*.

117. **Marasmius nigripes** (Schw.) Fries, Epicr. Myc. 383. 1838.

Agaricus nigripes Schw. Schr. Nat. Ges. Leipzig **1**: 84. 1822.
Heliomyces nigripes Morgan, Jour. Myc. **12**: 93. 1896.

Pileus membranous, campanulate, umbonate, 6–12 mm. broad; surface white, pruinose, pellucid, margin striate: lamellae adnate, broad, white or pallid, becoming dark in dried plants: spores angular, 8–9 μ: stipe insititious, slightly tapering downward, horny, blackish, white-pruinose, becoming brown in dried plants, 3.5–4 cm. long, 1–2 mm. thick.

TYPE LOCALITY: North Carolina.
HABITAT: Upon vegetable debris in woods.
DISTRIBUTION: North Carolina, New Jersey, Ohio, and Michigan.
ILLUSTRATIONS: C. G. Lloyd, Myc. Notes 46. *f. 19, 20*.

118. **Marasmius perforans** (Hoffm.) Fries, Epicr. Myc. 385. 1838.

Agaricus perforans Hoffm. Nom. Fung. 215. 1789.

Pileus submembranous, plane, not umbilicate, 8–12 mm. broad; surface rugulose, glabrous, pallid, margin not striate: context having a stinking odor, not of onions; lamellae adnate, many dimidiate, simple, crowded, whitish: spores 6–8 × 2–3 μ: stipe equal, hollow, brownish-black, velvety, 2–3 cm. long.

TYPE LOCALITY: Germany.
HABITAT: Leaves of *Abies*, sometimes upon leaves of other trees.
DISTRIBUTION: Temperate North America; also in Europe.
ILLUSTRATIONS: Cooke, Brit. Fungi *pl. 1130 (1085) C;* Schaeff. Fung. Bavar. *pl. 239* (as *Agaricus androsaceus*).
EXSICCATI: Roum. Fungi Sel. *6043*.

119. **Marasmius praeacutus** Ellis, Bull. Torrey Club 6: 76. 1876.

Pileus membranous, convex to expanded, subumbilicate, 6–10 mm. broad; surface pulverulent, white, the disk red-tinged; margin at first incurved, subsulcate, striate: lamellae adnate, more or less forked, hardly crowded, narrow, white: spores 5–6 × 3 μ: stipe swollen below but contracted to a point at the base, hollow, reddish-brown, white at the base, pulverulent, 2.5 cm. long, 1 mm. thick. In young plants, the swollen part of the stipe constitutes nearly the entire plant.

TYPE LOCALITY: Newfield, New Jersey.
HABITAT: On dead leaves, twigs, and bark.
DISTRIBUTION: New York and New Jersey.
EXSICCATI: Ellis, N. Am. Fungi *402*.

120. **Marasmius caricicola** C. H. Kauffman, sp. nov.

Pileus membranous, somewhat tough, pliant, convex-expanded, obtuse, gregarious, 4–8 mm. broad; surface broadly sulcate or alveolate, pruinose, pure-white: lamellae thick, adnate,

very distant, rather broad, pure-white: spores 15–18 × 6–6.5 μ; basidia 2- or 4-spored: stipe very short, terete, equal, subglabrous, pure-white, inserted by a naked base, 2 mm. long, 0.7 mm. thick.

Type collected upon stems of sedges in marshes near Ann Arbor, Michigan, October, 1907, *C. H. Kauffman* (herb. Kauffman).

DISTRIBUTION: Known only from the type locality.

121. **Marasmius opacus** Berk. & Curt. Jour. Bot. & Kew Misc. 1: 99. 1849.

Pileus submembranous, convex, often slightly depressed around a central umbo, 5–8 mm. broad; surface rugulose, scarcely striate, opaque, pulverulent, white: lamellae adnexed, distant, ventricose: spores 6–7 × 3 μ: stipe insititious, elongate, pulverulent, subfurfuraceous, pallid, 2.5–4 cm. long, 1 mm. thick.

TYPE LOCALITY: South Carolina.
HABITAT: Fallen leaves and branches.
DISTRIBUTION: South Carolina and Ohio.
EXSICCATI: Rav. Fungi Car. 3: *6*.

122. **Marasmius ramulinus** Peck, Ann. Rep. N. Y. State Mus. **51**: 286. 1898.

Pileus very thin, submembranous, broadly convex, subumbilicate, 4–8 mm. broad; surface white, margin nearly even to irregularly plicate-striate: lamellae adnate, rather close, white: spores 7–8 × 3.5–4 μ: stipe slender, inserted, whitish, becoming tawny-red, stuffed, minutely downy or pruinose, 12–18 mm. long.

TYPE LOCALITY: Delmar, New York.
HABITAT: Dead twigs and herbaceous stems.
DISTRIBUTION: Known only from the type locality.

123. **Marasmius phyllophilus** Peck, Bull. N. Y. State Mus. 116: 26. 1907.

Pileus membranous, convex or nearly plane, gregarious, 8–16 mm. broad; surface dry, strongly rugose-striate or rugose-sulcate, whitish with a faint pinkish tint when dry: lamellae adnexed, distant, narrow, rounded behind, whitish, the interspaces venose: spores 5–6 × 3–4 μ: stipe inserted, slender, equal, tough, hollow, white, covered with whitish downy or velvety pubescence, 20–30 mm. long, 1 mm. thick.

TYPE LOCALITY: Wading River, New York.
HABITAT: On fallen leaves.
DISTRIBUTION: New York.

124. **Marasmius insititius** Fries, Epicr. Myc. 386. 1838.

Pileus membranous, convex to plane or subumbilicate, 6–12 mm. broad; surface not polished, pale-yellowish-brown, then whitish, margin becoming plicate-sulcate: lamellae unequal, simple, broadly adnate, distant, narrow in front, pallid: spores 4 × 2.5 μ (Massee): stipe inserted, horny, hollow, reddish-brown, floccose-furfuraceous, 2–3 cm. long, 1 mm. thick.

TYPE LOCALITY: Sweden.
HABITAT: Leaves and twigs.
DISTRIBUTION: New York to North Carolina and west to Minnesota and Missouri; also in Europe.
ILLUSTRATIONS: Berk. Outl. Brit. Fungol. *pl. 14, f. 6*.
EXSICCATI: Rab.-Wint. Fungi Eur. *3533*.

125. **Marasmius tomentosipes** Peck, Bull. Torrey Club **29**: 71. 1902.

Agaricus caulicinalis Sw. Sv. Vet.-Akad. Nya Handl. **29**: 82. 1808. Not *A. caulicinalis* Bull. 1805.
Marasmius caulicinalis Fries, Epicr. Myc. 383. 1838.

Pileus thin, convex, becoming nearly plane, generally umbilicate, gregarious or subcespitose, 1–3.5 cm. broad; surface glabrous, widely striate on the margin when moist, golden-yellow, brownish-yellow, or ferruginous, often becoming brown with age: lamellae adnate or

decurrent, subdistant, thin, arcuate, pale-yellow: spores 6–7 × 3–4 μ: stipe tough, elastic, hollow, blackish-brown, covered with tawny tomentum, which forms minute, meal-like patches at the apex and a more or less dense mat at the base, 2–6 cm. long, 1–1.5 mm. thick.

TYPE LOCALITY: Moscow, Idaho.
HABITAT: Upon vegetable mold, often among grass or mosses.
DISTRIBUTION: Canada to Louisiana; also in Europe.
ILLUSTRATIONS: Bres. Fungi Trid. *pl. 41;* Britz. Hymen. Sudb. *pl. 9, f. 3,* Marasm. *f. 18;* Cooke, Brit. Fungi *pl. 1134 (1081) B*; Sow. Engl. Fungi *pl. 163.*
EXSICCATI: Clements, Crypt. Form. Colo. *182* (as *M. velutipes*); Rav. Fungi Am. *467* (as *M. flammans* Cooke; not *M. flammans* Berk. 1856); Roum. Fungi Sel. *6648;* Thüm, Myc. Univ. *506.*

126. **Marasmius alienus** Peck, Bull. N. Y. State Mus. 139: 25. 1910.

Pileus thin, tough, convex, 6–10 mm. broad; surface dry, subpruinose, pallid or pale-buff; margin thin, straight, striate in dry plants: lamellae subarcuate, slightly decurrent, distant, creamy-yellow, becoming brownish: spores 8–10 × 4–5 μ, oblong or narrowly ellipsoid: stipe firm, slender, hollow, pallid, subpruinose, 2.5–5 cm. long, 0.5–1 mm. thick.

TYPE LOCALITY: Fine, St. Lawrence County, New York.
HABITAT: Mossy, prostrate trunks in woods.
DISTRIBUTION: Known only from the type locality.

127. **Marasmius felix** Morgan, Jour. Myc. **12**: 2. 1906.

Pileus membranous, convex then expanded, 2–6 mm. broad; surface glabrous, rufescent, pale-rufous or nearly white to testaceous, becoming darker in drying, margin faintly plicate-rugose: lamellae adnate, unequal, some of them forked, distant, rather narrow, white: spores ovoid-oblong, apiculate, 7–9 × 3–4 μ: stipe elongate, capillary, insititious, brown or blackish, white at the apex, minutely pubescent, 2–8 cm. long.

TYPE LOCALITY: Preston, Ohio.
HABITAT: On old leaves of *Platanus*.
DISTRIBUTION: Ohio and Michigan.

128. **Marasmius badiceps** Peck, Bull. Torrey Club **24**: 142. 1897.

Marasmius badius Peck, Bull. Torrey Club **22**: 487. 1895. Not *M. badius* Berk. & Curt. 1868.

Pileus thin, convex, even, 6–15 mm. broad; surface glabrous, bay-brown or reddish-brown, fading in dry plants: lamellae narrow, adnate, subdistant, whitish: spores broadly ellipsoid, 5 × 3 μ: stipe glabrous, hollow, blackish-brown, not fading in dry plants, 2.5 cm. long, 2 mm. thick.

TYPE LOCALITY: Kansas.
HABITAT: Upon decaying wood in wet ground.
DISTRIBUTION: Kansas and Kentucky.

129. **Marasmius leptopus** Peck, Bull. N. Y. State Mus. 67: 25. 1903.

Pileus thin, broadly convex or nearly plane, 6–10 mm. broad; surface glabrous, reddish-brown; margin obscurely or rugosely striate: lamellae adnate, close, thin, narrow, white: spores oblong or narrowly ellipsoid, 7.5–9 × 3–4 μ: stipe slender, inserted, hollow, whitish or pallid, glabrous, 2.5–4 cm. long, 1 mm. thick.

TYPE LOCALITY: Botanical Garden, Bronx Park, New York.
HABITAT: Fallen leaves.
DISTRIBUTION: New England to Virginia and west to the Mississippi Valley.

130. **Marasmius ramealis** (Bull.) Fries, Epicr. Myc. 381. 1838.

Agaricus ramealis Bull. Herb. Fr. *pl. 336.* 1786.
Marasmius gregarius Peck, Bull. Torrey Club **23**: 413. 1896.
Collybiopsis ramealis Earle, Bull. N. Y. Bot. Gard. **5**: 415. 1909.

Pileus subfleshy, plane or depressed, obtuse, 4–9 mm. broad; surface rugulose, opaque, white, the disk with a reddish tint, margin not striate: lamellae adnate, connected behind, subdistant, narrow, white: spores ovoid, apiculate, 8–10 × 3–3.5 μ: stipe short, stuffed, white, reddish below, farinaceous, 12–18 mm. long, 1 mm. thick.

TYPE LOCALITY: France.
HABITAT: Upon twigs and branches.
DISTRIBUTION: Eastern United States; also in Europe.
ILLUSTRATIONS: Bull. Herb. Fr. *pl. 336;* Bernard, Champ. Roch. *pl. 43, f. 4;* Britz. Hymen. Sudb. Marasm. *f. 31;* Cooke, Brit. Fungi *pl. 1127 (1082) B;* Hard, Mushrooms *f. 113;* Pat. Tab. Fung. *No. 123;* Swanton, Fungi *pl. 10, f. 1;* Ricken, Blätterp. Deutschl. *pl. 25, f. 7.*
EXSICCATI: Ellis, N. Am. Fungi *1301;* Linhart, Fungi Hung. *450;* Westend. Herb. Crypt. Belge *995.*

131. **Marasmius Olneii** Berk. & Curt. Ann. Mag. Nat. Hist. III. 4: 294. 1859.

Pileus membranous, convex, then plane or depressed, 8–10 mm. broad; surface glabrous dull, rufescent, margin striate at first, then radiately rugose: lamellae joined to a collar which may become free, subdistant, white, the edges slightly crenulate: spores 9–11 × 4–5 μ: stipe pulverulent-tomentose, white, 3.5–4 cm. long.

TYPE LOCALITY: Rhode Island.
HABITAT: Upon dead twigs.
DISTRIBUTION: Rhode Island, Virginia, and Michigan.

132. **Marasmius filopes** Peck, Ann. Rep. N. Y. State Mus. **24**: 77. 1872.

Pileus membranous, delicate, convex, subumbilicate, 2 mm. broad; surface white, distantly and obscurely striate: lamellae about 6–8, adnexed to a collar, distant, white: spores 7–8 × 3 μ: stipe elongate, filiform, flexed, whitish, glabrous, brownish at the base, 2.5–4 cm. long.

TYPE LOCALITY: Indian Lake, New York.
HABITAT: Needles of *Abies.*
DISTRIBUTION: Adirondack Mountains, New York.
ILLUSTRATIONS: Ann. Rep. N. Y. State Mus. **24**: *pl. 4, f. 27–29.*

133. **Marasmius minutissimus** Peck, Ann. Rep. N. Y. State Mus. **27**: 97. 1875.

?*Eomycenella echinocephala* Atk. Bot. Gaz. **34**: 37. 1902.

Pileus minute, convex or expanded, 0.5–1 mm. broad; surface white, pubescent, with minute, simple or glandular hairs 30 μ long: lamellae few, narrow, often vein-like or almost wanting: spores not found in the type specimens: stipe capillary, minutely pubescent like the pileus, blackish-brown below, pellucid-white above.

TYPE LOCALITY: Forestburg, New York.
HABITAT: Upon fallen leaves.
DISTRIBUTION: New York and possibly North Carolina.
ILLUSTRATIONS: Ann. Rep. N. Y. State Mus. **27**: *pl. 2, f. 27, 28.*

134. **Marasmius cucullatus** Ellis, Bull. Torrey Club **6**: 76. 1876.

Pileus thin, campanulate, closing around the stipe when dry, 1–2 mm. broad; surface sulcate-striate, pale-straw-colored: lamellae adnate, about 12, of unequal length, paler than the pileus: spores not found: stipe slender, pale-straw-colored, with thin white tomentum at the base, 5–10 mm. long.

TYPE LOCALITY: Newfield, New Jersey.
HABITAT: Dead twigs of *Vaccinium corymbosum.*
DISTRIBUTION: Known only from the type locality.
EXSICCATI: Ellis, N. Am. Fungi *702.*

135. **Marasmius minutus** Peck, Ann. Rep. N. Y. State Mus. **27**: 97. 1875.

Pileus membranous, convex, 2–4 mm. broad; surface glabrous, reddish-brown, sometimes almost vinous-red, margin striate-sulcate: lamellae unequal, distant, subvenous, sometimes branched, white: spores 8 × 3.5–4 μ: stipe capillary, blackish-brown, glabrous, shining, 2.5 cm. long.

TYPE LOCALITY: Catskill Mountains, New York.
HABITAT: Fallen leaves.
DISTRIBUTION: New York, Virginia, Wisconsin, and Minnesota.

136. **Marasmius pyrinus** Ellis, Bull. Torrey Club **8**: 64. 1881.

?*Marasmius capillipes* Sacc. Nuovo Giorn. Bot. Ital. 8: 162. 1876.

Pileus membranous, hemispheric, slightly umbilicate, minute, 1–1.5 mm. broad; surface sulcate-striate, rough or spiny under a lens with ovoid, pointed cells, at first pallid, becoming chestnut: lamellae few, distant, white: spores obovoid, 7–8 × 2.5–3 μ; cystidia oblong-fusoid, narrowed to a point above, 12–13 μ long: stipe filiform, pallid above, often striate, 6–7 mm. long.

TYPE LOCALITY: Probably New Jersey.
HABITAT: Dead pear leaves.
DISTRIBUTION: North America; possibly also in Italy.
EXSICCATI: Ellis, N. Am. Fungi *401*.

137. **Marasmius thujinus** Peck, Bull. N. Y. State Mus. 67: 26. 1903.

Pileus membranous, hemispheric or convex, often subumbilicate, 2–3 mm. broad; surface subglabrous, minutely pulverulent-tomentose under a lens, cinereous tinged with lilac, margin distantly striate: lamellae adnate, few, distant, white: spores ellipsoid, pointed, 7–8 × 3–4 μ: stipe capillary, inserted, pallid, dry, pellucid, glabrous, at times slightly brownish or minutely floccose at the base, 12–24 mm. long, scarcely thicker than a hair.

TYPE LOCALITY: North Elba, New York.
HABITAT: Fallen leaves of *Thuja occidentalis*.
DISTRIBUTION: Known only from the type locality.

138. **Marasmius concinnus** Ellis & Ev. Proc. Acad. Phila. **1893**: 441. 1894.

Pileus minute, convex, cespitose, 1 mm. broad; surface pruinose, smoky-brown: lamellae adnate, subdistant, pruinose, the edges obtuse: spores globose, hyaline, 3 μ: stipe attenuate above, white, hairy-strigose below, pruinose-pubescent at the apex, 2 mm. long.

TYPE LOCALITY: Mt. Cuba, Delaware.
HABITAT: Dead *Euonymus* twigs.
DISTRIBUTION: Known only from the type locality.

139. **Marasmius alliatus** (Schaeff.) Schröt. Krypt.-Fl. Schles. **3**[1]: 559. 1889.

Agaricus alliatus Schaeff. Fung. Bavar. 4: Ind. 43. 1774.
Marasmius scorodonius Fries, Epicr. Myc. 379. 1838.

Pileus soft, fleshy, soon expanded, 1–2 cm. broad; surface at first even and rufous, soon becoming smooth, rugulose, crisped, and white: context having a strong odor of onions; lamellae adnate, crisped, white: spores 6–8 × 3–4 μ: stipe horny, hollow, equal or enlarged above, red or reddish-brown, glabrous, shining, 2–4 cm. long, 1–2 mm. thick.

TYPE LOCALITY: Bavaria.
HABITAT: Upon decaying vegetable debris in woods.
DISTRIBUTION: Temperate North America; also in Europe.
ILLUSTRATIONS: Fries, Sv. Aetl. Svamp. *pl. 32;* Britz. Hymen. Sudb. Marasm. *f. 8;* Cooke. Brit. Fungi *pl. 1079 (1125) A;* Cordier, Champ. Fr. *pl. 14, f. 15;* Hard, Mushrooms *f. 109;* E. & P. Nat. Pfl. 1[1]**: *f. 113, E;* Bot. Zeit. 18: *pl. 14, f, 15;* Pat. Tax. Hymén. 145, *pl. 2;* Ricken, Blätterp. Deutschl. *pl. 25, f. 6;* Schaeff. Fung. Bavar. *pl. 99*.
EXSICCATI: Herpell, Präp. Hutpilze *112;* Jacz. Fungi Rossiae *181;* Krieger, Fungi Sax. *367;* Rab.-Wint. Fungi Eur. *1803;* Romell, Fungi Scand. *1;* Roum. Fungi Sel. *5504;* Sydow, Myc. Germ. *852;* Sydow, Myc. Mar. *304*.

140. **Marasmius delectans** Morgan, Jour. Myc. **11**: 206. 1905.

Pileus subcoriaceous, convex, then expanded and depressed, 1–2 cm. broad; surface glabrous, rugulose, white, changing in drying to yellow or pale-alutaceous: lamellae emarginate-adnexed, subdistant, slightly venose-connected, moderately broad, unequal, white: spores lance-oblong, 7–9 × 4 μ: stipe long, slender, slightly tapering upward, arising from abundant white mycelium, glabrous, shining, brown, white at the apex, 3–5 cm. long, 1–1.5 mm. thick.

TYPE LOCALITY: Ohio.
HABITAT: On old leaves in deciduous woods.
DISTRIBUTION: New York to Michigan and Ohio.
ILLUSTRATIONS: Hard, Mushrooms *f. 114;* Myc. Bull. *f. 200*.

141. **Marasmius calopus** (Pers.) Fries, Epicr. Myc. 379. 1838.

Agaricus calopus Pers. Syn. Fung. 373. 1801.

Pileus soft, fleshy, convex to plane or depressed, 8–18 mm. broad; surface smooth, becoming rugose, light-yellow or white: lamellae emarginate-adnexed, thin, white: spores 7 × 4 μ: stipe equal, reddish-brown, glabrous, not mycelioid, shining.

TYPE LOCALITY: France.
HABITAT: Grass roots and among leaves in woods.
DISTRIBUTION: New York to the Carolinas and west to Ohio and Michigan; also in Europe.
ILLUSTRATIONS: Britz. Hymen. Sudb. Marasm. *f. 26, 43;* Cooke, Brit. Fungi *pl. 1125 (1079) B.*
EXSICCATI:? Rav. Fungi Am. *785.*

142. **Marasmius glabellus** Peck, Ann. Rep. N. Y. State Mus. **26**: 66. 1874.

Pileus membranous, convex to expanded, 6–15 mm. broad; surface dark-ochraceous, often roughened on the disk, pruinose with cystidia, margin distantly striate: lamellae free, unequal, interveined, distant, broad, ventricose, whitish: spores 9 × 4.5 μ; cystidia pointed, 30–40 μ long: stipe horny, equal, hollow, reddish-brown or chestnut, glabrous, shining, white at the apex, thickened and mycelioid at the base, 2.5–5 cm. long, 1 mm. thick.

TYPE LOCALITY: Worcester, New York.
HABITAT: Fallen leaves.
DISTRIBUTION: Temperate North America.
EXSICCATI: Ellis, N. Am. Fungi *910;* Ellis & Ev. Fungi Columb. *501.*

143. **Marasmius bellipes** Morgan, Jour. Myc. **11**: 207. 1905.

Pileus thin, subfleshy, campanulate, then expanded, 1.5–2.5 cm. broad; surface glabrous pale-pinkish to purplish, margin plicate-sulcate: lamellae approximate, subdistant, moderately broad, equal, white: spores lance-shaped, 10–12 × 3–4 μ: stipe long, slender, thicker upward, brown and shining below, purplish at the apex, glabrous, arising from abundant mycelium, 4–6 cm. long, 1 mm. thick.

TYPE LOCALITY: Ohio.
HABITAT: Old leaves of deciduous trees.
DISTRIBUTION: New York, Ohio, and Michigan.

144. **Marasmius plicatulus** Peck, Bull. Torrey Club **24**: 142. 1897.

Pileus submembranous, convex or subcampanulate, 2–3 cm. broad; surface glabrous even when moist, sulcate or striate when dry, dark-vinous-red inclining to bay-brown: lamellae slightly adnexed, subdistant, rather broad, narrowed behind, whitish: spores subellipsoid, apiculate at one end, narrowed at other, 10–13 × 5–7 μ: stipe slender, hollow, radicating and blackish-brown at the base, with dense, white villosity, red and glabrous above, shining, often striate when dry, 6–10 cm. long.

TYPE LOCALITY: Southern California.
HABITAT: Fallen leaves and vegetable debris.
DISTRIBUTION: Western North America.

145. **Marasmius rotula** (Scop.) Fries, Epicr. Myc. 385. 1838.

Agaricus rotula Scop. Fl. Carn. ed. 2. **2**: 456. 1772.
Agaricus androsaceus Bull. Herb. Fr. *pl. 64.* 1781.

Pileus membranous, convex, umbilicate, gregarious or subcespitose, 3–10 mm. broad; surface plicate, not polished, whitish, often light-brown in dried plants, the disk sometimes darker: lamellae few, broad, distant, joined together behind into a free collar, whitish: spores 6–8 × 3–4 μ: stipe fistulose, horny, smooth, shining, blackish-brown, inserted or arising from rhizomorphic strands, 2–5 cm. long.

TYPE LOCALITY: Carniola.
HABITAT: Upon dead leaves, wood, or bark.
DISTRIBUTION: Temperate North America; also in Europe.

ILLUSTRATIONS: Bull. Herb. Fr. *pl. 64, pl. 569, f. 3;* Cooke, Brit. Fungi *pl. 1129 (1084) A;* E. & P. Nat. Pfl. 1[1]**: *f. 113;* Gill. Champ. Fr. *pl. 198 (443), f. 1;* Hard, Mushrooms *f. 108;* Ricken, Blätterp. Deutschl. *pl. 25, f. 10;* Sow. Engl. Fungi *pl. 95.*

EXSICCATI: Cavara, Fungi Longob. *20;* Cooke, Fungi Brit. *302;* Ellis & Ev. N. Am. Fungi *2501;* Krieger, Fungi Sax. *225;* Roum. Fungi Gall. *2605, 4013;* Roum. Fungi Sel. *5902;* Shear, N. Y. Fungi *22;* Sydow, Myc. Mar. *303;* Sydow, Myc. Germ. *851;* Westend. Herb. Crypt. Belge *1282.*

146. **Marasmius albiceps** Peck, Ann. Rep. N. Y. State Mus. **43**: 67 (21). 1890.

Pileus membranous, convex or campanulate, 5 mm. broad; surface glabrous, white: lamellae adnate or arcuate–decurrent, distant, broad, white: spores obovoid, 6–7 × 3–4 μ: stipe horny, setiform, black, paler at the apex, glabrous, growing from a brown mycelium, 16–36 mm. long.

TYPE LOCALITY: Manor, New York.
HABITAT: Among fallen branches in woods.
DISTRIBUTION: New York and Michigan.

147. **Marasmius straminipes** Peck, Ann. Rep. N. Y. State Mus. **26**: 66. 1874.

Pileus membranous, hemispheric or convex, 2.5–8 mm. broad; surface glabrous, white, margin striate: lamellae adnexed, distant, unequal, white, yellow in drying: spores 7 × 3.5 μ: stipe horny, filiform, pale-straw-colored, pallid when dry, brownish at the base, glabrous, shining, 2.5–5 cm. long.

TYPE LOCALITY: Center, New York.
HABITAT: Fallen leaves of *Pinus rigida.*
DISTRIBUTION: Newfoundland and New York.
EXSICCATI: ?Ellis, N. Am. Fungi *701.*

148. **Marasmius capillaris** Morgan, Jour. Cinc. Soc. Nat. Hist. **6**: 194. 1883.

Pileus membranous, convex, umbilicate, 2–5 mm. broad; surface plicate-sulcate, very minutely wrinkled, alutaceous to umber, white at the center: lamellae equal, broad, white, attached to a free collar: spores 8–10 × 4–5 μ: stipe capillary, very long, inserted, black, paler at the apex, glabrous, shining, 5–6 cm. long.

TYPE LOCALITY: Miami Valley, Ohio.
HABITAT: Upon old leaves and sticks in woods.
DISTRIBUTION: New York to Michigan and south to Alabama.

149. **Marasmius graminum** (Libert) Berk. & Br.; Berk. Outl. Brit. Fungol. 222. 1860.

Agaricus graminum Libert, Pl. Crypt. *119.* 1832.

Pileus membranous, convex to plane, umbonate, 3–6 mm. broad; surface reddish-white, becoming darker in dried plants, margin sparingly sulcate: lamellae free with a collar, equal, distant, whitish: spores 9 × 4.5 μ: stipe capillary, tough, black or pallid at the apex, glabrous, shining.

TYPE LOCALITY: France.
HABITAT: Dead grass.
DISTRIBUTION: Temperate North America; also in Europe.
ILLUSTRATIONS: Berk. Outl. Brit. Fungol. *pl. 14, f. 8.*
EXSICCATI: Ellis, N. Am. Fungi *2301;* Rav. Fungi Am. *105.*

150. **Marasmius siccus** (Schw.) Fries, Epicr. Myc. 382. 1838.

Agaricus siccus Schw. Schr. Nat. Ges. Leipzig **1**: 84. 1822.
Marasmius campanulatus Peck, Ann. Rep. N. Y. State Cab. **23**: 126. 1872.
Marasmius fulviceps Clements, Bot. Surv. Nebr. **4**: 20. 1896. Not *M. fulviceps* Berk. 1847.
Marasmius Clementsianus Sacc. & Sydow, in Sacc. Syll. Fung. **14**: 101. 1899.

Pileus membranous, convex or campanulate, solitary or gregarious, 6–15 mm. broad; surface dry, glabrous, ochraceous, sometimes pink, rarely gray in dry plants; margin radiate-

sulcate: lamellae subfree, narrowed behind, few, distant, broad, white: spores 12–15 × 6–7 μ, rarely 20 μ long: stipe slender, not capillary, tough, hollow, blackish-brown, glabrous, shining, 2.5–5 cm. long, 1–2 mm. thick.

TYPE LOCALITY: South Carolina.
HABITAT: Dead leaves in woods.
DISTRIBUTION: New England to South Carolina and west to the Mississippi Valley.
ILLUSTRATIONS: Hard, Mushrooms *f. 110–111.*
EXSICCATI: Ellis & Ev. N. Am. Fungi *1591;* Thüm. Myc. Univ. *2104;* Underw. & Cook, Illust. Fungi *5.*

151. **Marasmius melanopus** Morgan, Jour. Cinc. Soc. Nat. Hist. **18**: 36. 1895.

Pileus membranous, convex, 4–6 mm. broad; surface glabrous, purplish-gray, margin not striate: lamellae adnate, subdistant, rather broad, purplish-gray: spores obovoid, apiculate, 5–6 × 2.5 μ: stipe slender, hollow, black, shining, smooth, 2–4 cm. long.

TYPE LOCALITY: Preston, Ohio.
HABITAT: Dead leaves.
DISTRIBUTION: New York to Michigan and Ohio.

152. **Marasmius pulcherripes** Peck, Ann. Rep. N. Y. State Mus. **24**: 77. 1872.

Pileus membranous, campanulate, obtuse, 4–8 mm. broad; surface distantly striate, dry, glabrous, soft-maroon or vinous-red: lamellae free, few, distant, ascending, narrow: spores 12–14 × 4 μ: stipe strict, brownish-black, clear-red at the apex, glabrous, shining, 2.5–4 cm. long, 0.5 mm. thick.

TYPE LOCALITY: Garrison, New York.
HABITAT: Sticks and leaves.
DISTRIBUTION: New York to Virginia.
ILLUSTRATIONS: Ann. Rep. N. Y. State Mus. **24**: *pl. 4, f. 19–22.*

153. **Marasmius androsaceus** (L.) Fries, Epicr. Myc. 385. 1838.

Agaricus androsaceus L. Sp. Pl. 1125. 1753.

Pileus membranous, convex, subumbilicate, 3–12 mm. broad; surface glabrous, fuscous or often with a pinkish tint, sometimes nearly white, margin striate: lamellae simple, distinct, subdistant, adnate, whitish: spores ovoid-ellipsoid or oblong, 6–9 × 3 μ: stipe horny, contorted and sulcate when dry, hollow, black, glabrous, 2–5 cm. long, 0.5 mm. thick.

TYPE LOCALITY: Sweden.
HABITAT: Upon dead leaves in woods.
DISTRIBUTION: Temperate North America; also in Europe.
ILLUSTRATIONS: Bolt. Hist. Fung. *pl. 32;* Bull. Herb. Fr. *pl. 569, f. 2;* Cooke, Brit. Fungi *pl. 1129 (1084) C;* Gill. Champ. Fr. *pl. 439, f. 1;* Hard, Mushrooms *f. 103;* Ricken, Blätterp. Deutschl. *pl. 25, f. 6;* Sow. Engl. Fungi *pl. 94.*
EXSICCATI: D. Sacc. Myc. Ital. *1;* Roum. Fungi Sel. *6943;* Sydow, Myc. Mar. *601;* Sydow, Myc. Germ. *301.*

DOUBTFUL AND EXCLUDED SPECIES

Heliomyces? Plumierii Lév. Ann. Sci. Nat. III. **2**: 178. 1844. Based on Plumier's *pl. 168,* drawn from a West Indian plant. It is apparently near *Marasmius Berteroi.*

Marasmius albomarginatus Clements, Bot. Surv. Nebr. **3**: 20. 1894. The single type specimen examined seems to be a small species of *Mycena.*

Marasmius alliaceus (Jacq.) Fries, Epicr. Myc. 383. 1838. Reported from North Carolina by Cooke, Curtis, and Schweinitz; from Pennsylvania by Schweinitz; and from Minensota by Johnson. The Schweinitz and Johnson specimens have been destroyed and the others are not available for examination.

Marasmius amadelphus (Bull.) Fries, Epicr. Myc. 380. 1838. Reported from Missouri by Winter and Demetrius. Specimens are not available for examination.

Marasmius arecarius tenellus Fries, Nova Acta Soc. Sci. Upsal. III. **1**: 30. 1851. Described from specimens collected by Oersted at Morningstar, Santa Cruz Island, on stems of *Areca*. A small colored figure, which gives very little idea of the plant, may still be seen at Copenhagen. No specimens have been preserved.

Marasmius bombycirhiza Berk. & Cooke; Cooke, Grevillea **6**: 129. 1878. Reported from Florida. Specimens are not available for examination.

Marasmius brevipes Berk. & Rav.; Berk. & Curt. Ann. Mag. Nat. Hist. II. **12**: 426. 1853. Described from South Carolina. Specimens are not available for examination.

Marasmius candidus (Bolt.) Fries, Epicr. Myc. 381. 1838. Reported from Cuba and various parts of the United States. Specimens available for examination are either doubtful or referred to other species.

Marasmius clavaeformis Berk. Lond. Jour. Bot. **6**: 316. 1847. Reported from Ohio; specimens are not available for examination. Specimens at Kew from North and South Carolina are of doubtful determination.

Marasmius (*Mycena*) *cucurbitula* Mont. Syll. Crypt. 141. 1856. Reported from Ohio. Specimens are not available for examination.

Marasmius Curreyi Berk. & Br. Ann. Mag. Nat. Hist. V. **3**: 209. 1879. Reported from Alabama by Atkinson. Specimens are not available for examination. It is doubtful if this species is distinct from *M. graminum* (Libert) Berk.

Marasmius haematocephalus (Mont.) Fries, Epicr. Myc. 382. 1838. Reported from North Carolina by Curtis and from Rhode Island by Bennett. Specimens are not available for examination.

Marasmius impudicus Fries, Epicr. Myc. 377. 1838. Reported from New York by Peck. Peck's specimens are doubtful; they are evidently not *M. impudicus* Fries of Europe.

Marasmius Juglandis Berk. & Curt.; Sacc. Syll. Fung. **9**: 67. 1891. Collected in Alabama by Peters. The specimens are not available for examination.

Marasmius (*Mycena*) *leucocephalus* Mont. Syll. Crypt. 142. 1856. Reported from Ohio by Sullivant. Specimens are not available or examination.

Marasmius (*Mycena*) *macrorrhizus* Mont. Syll. Crypt. 142. 1856. Reported from Ohio by Sullivant. Specimens are not available for examination.

Marasmius Morganianus Sumst. Mycologia **6**: 35. 1914.

Marasmius nuptialis Morgan, Jour. Myc. **11**: 238. 1905. Described from Ohio plants by Morgan. The type specimens have been lost and no others are available for examination.

Marasmius papillosus Clements, Bot. Surv. Nebr. **3**: 21. 1894. The type specimens are doubtful. They seem to be a species of *Mycena*.

Marasmius plancus Fries, Epicr. Myc. 375. 1838. Reported from North Carolina in Curtis' Catalogue; Massachusetts by Frost; Minnesota by Johnson; Ohio by Kellerman and Underwood; Rhode Island by Bennett; and from New York by Peck. Peck's plants were later referred to *M. subnudus*. Other specimens are doubtful or not available for examination.

Marasmius pruinatus Berk. & Curt. Ann. Mag. Nat. Hist. III. **4**: 295. 1859. Described from material sent from New England by Sprague. Specimens are not available for examination.

Marasmius pruinosus Fries, Nova Acta Soc. Sci. Upsal. III. **1**: 32. 1851. Described from plants collected by Oersted on rotten wood in Costa Rica. The drawing preserved at Copenhagen reminds one of a small white species of *Mycena*. No specimens were found and the description is inadequate.

Marasmius pusio Berk. & Curt. Ann. Mag. Nat. Hist. II. **12**: 426. 1853. Described from material sent from South Carolina by Ravenel. This may be a *Mycena*, near *M. corticola* Schum. Specimens are not available for examination.

Marasmius pyrrhocephalus Berk. Lond. Jour. Bot. **6**: 316. 1847. Described from material sent from Ohio. Specimens are not available for examination.

Marasmius (*Mycena*) *rigidus* Mont. Syll. Crypt. 143. 1856. Described from material sent from Ohio by Sullivant. Specimens are not available for examination.

Marasmius saccharinus (Batsch) Fries, Epicr. Myc. 386. 1838. Reported from Ohio by Hard. All specimens examined have been referred to *M. squamula.*

Marasmius Sullivantii Mont. Syll. Crypt. 143. 1856. Described from material sent from Ohio by Sullivant. Specimens are not available for examination.

Marasmius sulphureus Johnson, Bull. Minn. Acad. Sci. **1**: 337. 1878. Specimens are not available for examination.

Marasmius tener Berk. & Curt. Proc. Am. Acad. **4**: 121. 1858. This minute species, described from Wright's collections in the Bonin Islands, was reported from South Carolina and Cuba. The original description is very brief.

Marasmius Vaillantii Fries, Epicr. Myc. 380. 1838. Reported from North Carolina by Curtis. Specimens are not available for examination.

Marasmius viticola Berk. & Curt. Ann. Mag. Nat. Hist. III. **4**: 295. 1859. Described from material sent from Alabama. Reported also from Maine, New York, Ohio, and Michigan. Specimens examined should be referred to *M. dichrous* Berk. & Curt. or to *M. foetidus* Fries.

21. **POLYMARASMIUS** Murrill, gen. nov.

Pileus small, thin, membranous, reviving, glabrous or nearly so: lamellae adnate to a collar: spores hyaline: stipe compound, rhizomorphic, the fertile branches central and capillary: veil none.

Type species, *Marasmius multiceps* Berk. & Curt.

Pileus 6 mm. broad. 1. *P. multiceps.*
Pileus 2 mm. broad.
  Surface white, bay on the umbo. 2. *P. submulticeps.*
  Surface bay throughout. 3. *P. sarmentosus.*

1. **Polymarasmius multiceps** (Berk. & Curt.) Murrill.

Marasmius multiceps Berk. & Curt. Jour. Linn. Soc. **10**: 298. 1868.

Pileus hemispheric, umbilicate, blackish-papillate, cespitose, 6 mm. broad; surface white, glabrous, transversely rugose, margin sulcate: lamellae white, ventricose, few, adnate to a collar: common rhizomorphic stipe long, creeping, proliferous, black, glabrous; fertile stipe vertical, black, glabrous, 1.2–2.5 cm. long.

TYPE LOCALITY: Cuba.
HABITAT: On dead logs in woods.
DISTRIBUTION: Known only from the type locality.

2. **Polymarasmius submulticeps** Murrill, sp. nov.

Pileus hemispheric, distinctly umbonate, 2 mm. broad; surface white, deeply sulcate, glabrous, the umbo hemispheric and dull-bay or chestnut, margin entire, concolorous: lamellae broad, distant, adnate to a collar, white: fertile stipe short, smooth, glabrous, black, highly polished, rigid, cylindric, usually 5 mm. long and 0.5 mm. thick; common rhizomorphic stipe similar in appearance, but long and creeping, with many branches which bear the small hymenophores.

Type collected on dead wood and humus in British Honduras, 1906, *Morton E. Peck* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

3. **Polymarasmius sarmentosus** (Berk.) Murrill.

Marasmius sarmentosus Berk. Lond. Jour. Bot. **5**: 2. 1846.
Marasmius tomentellus Berk. & Curt. Jour. Linn. Soc. **10**: 298. 1868.

Pileus hemispheric to convex, at first umbonate, 1–2.5 mm. broad; surface fulvous to subspadiceous, margin involute to expanded, entire, densely silky, sulcate: lamellae few, concolor-

ous: common rhizomorphic stipe long, black, whitish-pubescent to glabrous; fertile stipe short, pubescent, blackish, about 4 mm. long.

TYPE LOCALITY: Jamaica.
HABITAT: On dead wood and leaves.
DISTRIBUTION: Jamaica, Cuba, Porto Rico, and Guadeloupe; also in Brazil.

22. **CRINIPELLIS** Pat. Jour. de Bot. **3**: 336. 1889.

Pileus thin, reviving, conspicuously decorated with threadlike hairs, scales, or spines: lamellae adnate or adnexed: spores hyaline; veil none; stipe central, slender, tubular.

Type species, *Collybia stipitaria* Fries.

Pileus 1–2.5 cm. broad.	
Temperate species.	1. *C. zonata.*
Tropical species.	2. *C. sublivida.*
Pileus less than 1 cm. broad.	
Pileus papillate or umbonate.	
Stipe 2–6 cm. long; pileus usually grayish.	3. *C. scabella.*
Stipe 1–2 cm. long; pileus fulvous.	4. *C. stupparia.*
Pileus neither papillate nor umbonate.	
Surface villose.	
Stipe 0.5–1 cm. long; temperate species.	5. *C. alnicola.*
Stipe 4 cm. long; tropical species.	6. *C. squamifolia.*
Surface echinulate.	7. *C. echinulata.*

1. **Crinipellis zonata** (Peck) Pat. Tax. Hymén. 143. 1900.

Agaricus (*Collybia*) *zonatus* Peck, Ann. Rep. N. Y. State Mus. **24**: 61. 1872.

Pileus fleshy, thin, convex or nearly plane, umbilicate, commonly cespitose, 12–24 mm. broad; surface fibrillose-tomentose, tawny or ochraceous-tawny, sometimes faintly marked with darker zones: lamellae narrow, close, free, white or whitish, with white, pulverulent edges: spores ellipsoid, 5–7×3.5–4.5 μ: stipe firm, equal, hollow, fibrillose-tomentose, tawny or brownish-tawny, 2.5–5 cm. long, 2 mm. thick.

TYPE LOCALITY: Albany, New York.
HABITAT: On decaying wood.
DISTRIBUTION: New York to Alabama and west to Indiana.

2. **Crinipellis sublivida** Murrill, sp. nov.

Pileus convex, solitary, 2 cm. broad; surface between lilac and livid, darker at the center, tufted-fibrillose, margin striate, concolorous: lamellae free or adnexed, pale-lilac, distant, inserted, rather narrow: stipe paler than the pileus, scabrous above, tomentose below, whitish at the base, 2 cm. long, 1 mm. thick.

Type collected on dead fallen sticks in a virgin forest at Motzorongo, near Cordoba, Mexico, January 15, 1910, *W. A. & Edna L. Murrill 1047* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

3. **Crinipellis scabella** (Alb. & Schw.) Murrill.

Agaricus scabellus Alb. & Schw. Consp. Fung. 189. 1805.
? Agaricus caulicinalis Bull.; DC. Fl. Fr. **2**: 192. 1805.
Agaricus (*Collybia*) *stipitarius* Fries, Syst. Myc. **1**: 138. 1821.

Pileus thin, submembranous, campanulate-convex or nearly plane, umbilicate, 6–12 mm. broad; surface sometimes with a minute blackish papilla in the umbilicus, fibrillose-hairy or squamulose, usually grayish, sometimes grayish-tawny, tawny, or brownish: lamellae adnexed, sometimes separating and becoming free, subdistant, white: spores ellipsoid, 6–7.5×4 μ, with an oblique apiculus at one end: stipe slender, fibrillose-hairy, brown, the fibrillose coating gray or tawny, tough, stuffed or hollow, 2–6 cm. long, 0.7–1 mm. thick.

TYPE LOCALITY: Germany.
HABITAT: On dead stems, twigs, roots, and leaves.
DISTRIBUTION: Eastern United States west to the Rocky Mountains; tropical North America; also in Europe.
ILLUSTRATIONS: Alb. & Schw. Consp. Fung. *pl. 9, f. 6;* Bull. Herb. Fr. *pl. 522, f. 1.*
EXSICCATI: R. Maire, Myc. Bor.-Afr. *19;* Krieger, Fungi Sax. *366;* Ellis, N. Am. Fungi *1201;* Desmaz. Pl. Crypt. *2018;* Rab.-Wint. Fungi Eur. *3534.*

4. **Crinipellis stupparia** (Berk. & Curt.) Pat. Tax. Hymén. 143. 1900.

Agaricus (Collybia) stupparius Berk. & Curt. Jour. Linn. Soc. **10**: 285. 1868.

Pileus convex to plane, subcostate, rather thin, umbonate to umbonate-depressed, 2–8 mm. broad; surface fulvous, densely covered with long, overlapping, fibrillose, fulvous scales: lamellae broad, rather crowded, adnate to a collar, white to discolored: spores ovoid, smooth, hyaline or slightly yellowish, granular, 7–9×5–7 μ; stipe slender, equal, concolorous, coarsely and conspicuously villose-hispid, with fulvous, subfasciculate hairs, 1–2 cm. long, about 0.5 mm. thick.

TYPE LOCALITY: Cuba.
HABITAT: On fallen dead sticks in woods.
DISTRIBUTION: Cuba, Bermuda, and Mexico.

5. **Crinipellis alnicola** Murrill, sp. nov.

Pileus subglobose to convex, rather firm, gregarious, 5–8 mm. broad; surface densely villose, chestnut-colored, not becoming glabrous, margin concolorous, involute, strongly inflexed on drying: lamellate adnate, rather broad and distant, pallid, the edges finely notched: stipe clothed and colored like the pileus, pallid and tomentose at the apex, cylindric, equal, spongy-stuffed, with a cortex, 5–10 mm. long, 1–1.5 mm. thick.

Type collected on dead alder trunks in dense woods near Seattle, Washington, October 20–November 1, 1911, *W. A. Murrill 561* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

6. **Crinipellis squamifolia** Murrill, sp. nov.

Pileus conic to convex, not expanding, solitary or gregarious, 1 cm. broad and 5 mm. high; surface melleous, conspicuously covered with long, loose, shaggy, ferruginous-fulvous hairs, margin entire, even, concolorous: lamellae distant, adnate, ventricose, very pale russet to grayish, covered with hyaline or yellowish scales, which are irregular, angular, about 12–14×7–9 μ; spores ovoid, smooth, hyaline, 7×5 μ: stipe cylindric, equal, enlarged at the base, pallid, with conspicuous, ferruginous hairs similar to those on the pileus, becoming subglabrous with age at the apex, 4 cm. long, 1.5 mm. thick.

Type collected in soil on a moist bank among dead sticks at Chester Vale, Jamaica, December 21–24, 1908, *W. A. & Edna L. Murrill 271* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Jamaica and Mexico, at 1000–2000 m. elevation.

7. **Crinipellis echinulata** Murrill, sp. nov.

Pileus globose to subexpanded, convex, tough, opaque, gregarious, 5 mm. broad; surface radiate-sulcate, bay to chestnut, conspicuously covered with pointed, concolorous spines, which are more prominent on the disk in mature plants: lamellae broad, crowded, whitish: spores globose to subglobose, smooth, hyaline, 4–6 μ; stipe slender, smooth, glabrous, dark-avellaneous to fuscous, 1–2.5 cm. long, about 0.5 mm. thick.

Type collected on a fallen dead trunk in woods at Orizaba, Mexico, January 10–14, 1910, *W. A. & Edna L. Murrill 852* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

23. **LENTINUS** Fries, Syst. Orbis Veg. 77. 1825.

Pocillaria (P. Br.) Kuntze, Rev. Gen. 865. 1891.
Panus Fries, Epicr. Myc. 396. 1838.

Pileus thin, coriaceous, reviving, umbilicate or infundibuliform: lamellae decurrent: spores hyaline: stipe central, rarely eccentric, solid, more or less woody: veil none.

Type species, *Lentinus tuber-regium* Fries.

Pileus glabrous.
  Temperate species.
    Pileus 1–3 cm. broad.
      Pileus and stipe white or yellowish; odor very agreeable. 1. *L. suavissimus.*
      Pileus and stipe brownish-tan; odor not noticeable. 2. *L. umbilicatus.*

Pileus 5–12 cm. broad. 3. *L. carneotomentosus.*
Tropical species.
Pileus white or whitish at maturity, less than 1 cm. broad. 4. *L. orizabensis.*
Pileus isabelline at maturity.
Hymenophore mostly solitary; spores 7 ×4 μ. 5. *L. graminicola.*
Hymenophore gregarious to cespitose; spores 3.5 ×2.5 μ. 6. *L. subscyphoides.*
Pileus reddish-brown at maturity.
Pileus 1–1.5 cm. broad. 7. *L. scyphoides.*
Pileus 6–8 cm. broad. 8. *L. tubarius.*
Pileus imbricate-scaly or coarsely fasciculate-scaly.
Pileus 1.5–2.5 cm. broad; temperate species. 9. *L. sulcatus.*
Pileus 3–8 cm. broad; tropical species.
Pileus 3–5 cm. broad; surface white or yellowish with concolorous pyramidal fascicles. 10. *L. pyramidatus.*
Pileus 5–8 cm. broad; surface white with brown, spot-like scales. 11. *L. albellus.*
Pileus conspicuously velvety, strigose, or hispid, becoming glabrous at times in a few species.
Pileus 2–7 cm. broad.
Stipe glabrous or nearly so. 12. *L. crinitus.*
Stipe conspicuously velvety or tomentose.
Pileus isabelline; usually eccentric. 13. *L. strigosus.*
Pileus dark-fulvous; confined to the tropics. 14. *L. strigellus.*
Pileus pale-cinnamon to chestnut-brown; stipe slender, concolorous. 15. *L. velutinus.*
Pileus 8–20 cm. broad.
Stipe 5–8 cm. long; temperate species. 16. *L. levis.*
Stipe 1–2.5 cm. long; tropical species.
Pileus white; spores narrowly ellipsoid, 6–8 ×3–3.5 μ. 17. *L. hirtus.*
Pileus isabelline; spores oblong-ellipsoid or somewhat fusiform, 4–5 ×1.5–2 μ. 18. *L. hirtiformis.*

1. **Lentinus suavissimus** Fries, Syn. Gen. Lent. 13. 1836.

Pileus thin, tough, peltate, convex and umbilicate or centrally depressed, 1.2–3 cm. broad; surface glabrous, even or striate on the margin, whitish to yellowish: context white, the odor agreeable, resembling that of melilot; lamellae denticulate, decurrent, sometimes wavy and anastomosing at the base, whitish or yellowish: spores minute, 5–6 ×2.5–3 μ: stipe very short or obsolete, central, eccentric or almost lateral, white or whitish, about 2 mm. long and 2 mm. thick.

TYPE LOCALITY: Smoland, Sweden.
HABITAT: Dead branches of willow and certain other deciduous trees.
DISTRIBUTION: Northeastern United States; also in Europe.

2. **Lentinus umbilicatus** Peck, Ann. Rep. N. Y. State Mus. **28**: 51. 1876.

Lentinus omphalodes Fries, Hymen. Eur. 485. 1874. Not *L. omphalodes* Berk. & Curt. 1872.
Lentinus americanus Peck, Bull. Torrey Club **29**: 72. 1902.
Lentinus piceinus Peck, Bull. N. Y. State Mus. 150: 33. 1911.

Pileus fleshy but thin, tough, deeply umbilicate, gregarious to cespitose, 8–24 mm. broad; surface glabrous, hygrophanous, brownish-tan when moist, paler when dry; margin irregular or lobed: context having an agreeable taste and odor; lamellae adnate or decurrent, serrate on the edges, whitish: spores subglobose, hyaline, 4–6 μ: stipe slender, glabrous, nearly even, tough, stuffed or hollow, central or eccentric, colored like the pileus, varying in length, 2–24 mm. long, 2–3 mm. thick.

TYPE LOCALITY: Lake Pleasant, New York.
HABITAT: On decayed deciduous or coniferous wood.
DISTRIBUTION: Maine to Virginia and west to Idaho.
ILLUSTRATIONS: Ann. Rep. N. Y. State Mus. **28**: *pl. 1, f. 15–19.*

3. **Lentinus carneotomentosus** (Batsch) Schröt. Krypt.-Fl. Schles. **3**[1]: 554. 1889.

Agaricus flabelliformis Schaeff. Fung. Bavar. **4**: Ind. 20. 1774. Not *A. flabelliformis* Scop. 1772.
Agaricus carneotomentosus Batsch, Elench. Fung. 89. 1783.
Agaricus conchatus Bull. Herb. Fr. *pl. 298.* 1786.
Agaricus torulosus Pers. Syn. Fung. 475. 1801.
Agaricus inconstans Pers. Syn. Fung. 475. 1801.
Panus torulosus Fries, Epicr. Myc. 397. 1838.

Panus conchatus Fries, Epicr. Myc. 398. 1838.
Panus flabelliformis Quél. Fl. Myc. Fr. 325. 1888.

Pileus soft-fleshy to coriaceous, varying in shape from nearly circular with eccentric stipe to flabelliform or dimidiate with lateral stipe, plane to depressed, infundibuliform at times, usually cespitose, 5–10×6–12 cm.; surface glabrous and polished, faintly radiate-striate, becoming squamulose at times with age, isabelline to cinnamon, sometimes tinged with lilac, opaque and varying in color when young, margin involute, concolorous, often distinctly lobed: context easily torn but flaccid and drying thin, taste rather mild; lamellae decurrent, narrow, close, rather firm, dull-white with a rosy tint, becoming somewhat ochraceous, a few of them forking: spores ellipsoid, smooth, hyaline, 6.5–7×4–5 μ: stipe short, unequal, oblique, eccentric to lateral, pruinose to grayish-tomentose, whitish or concolorous, pubescent at the base, 2–4 cm. long, about 1.5 cm. thick.

TYPE LOCALITY: Jena, Germany.
HABITAT: On dead trunks of various deciduous trees.
DISTRIBUTION: Eastern United States and west to Minnesota and Kansas; also in Europe.
ILLUSTRATIONS: Gill. Champ. Fr. *pl. 249 (511);* Hard, Mushrooms *f. 180;* Lanzi, Funghi Mang. *pl. 44, f. 3;* Bull. Herb. Fr. *pl. 298.*

4. **Lentinus orizabensis** Murrill, sp. nov.

Pileus minute, convex, umbilicate, solitary, 5–8 mm. broad; surface glabrous, smooth, white tinged with yellow, margin concolorous, entire to lobed, involute: lamellae several times inserted, narrow, distant, adnate to somewhat decurrent, ochraceous-isabelline, the edges entire: stipe short, thick, milk-white, smooth, pruinose, central or slightly eccentric, subequal, about 3 mm. long and 1.5 mm. thick.

Type collected on a dead fallen banana leaf in an orchard at Orizaba, Mexico, January 10–14, 1910, *W. A. & Edna L. Murrill 813* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

5. **Lentinus graminicola** Murrill, Mycologia **3**: 33. 1911.

Pileus small, regular, funnel-shaped, mostly solitary, 2–3 cm. broad, the central depression about 5 mm. wide; surface glabrous, smooth, isabelline; margin fibrillose, concolorous, deflexed on drying: context thin, rigid when dry; lamellae white, of medium breadth and distance apart, unequal, decurrent, edges entire: spores smooth, ovoid, hyaline, 7×4 μ: stipe gradually enlarged above, abruptly swollen at the base, glabrous, smooth, concolorous, solid, 2–3 cm. long, 2–3 mm. thick.

TYPE LOCALITY: Herradura, Cuba.
HABITAT: Among grass attached to old grass roots.
DISTRIBUTION: Western Cuba.

6. **Lentinus subscyphoides** Murrill, Mycologia **3**: 34. 1911.

Pileus very thin, nearly regular, funnel-shaped, gregarious to cespitose, 2–4 cm. broad; surface smooth, glabrous, avellaneous tinged with russet or fuliginous when young, becoming isabelline at maturity; margin involute, concolorous, glabrous: context thin, tough, rigid on drying; lamellae lilac when young, changing to isabelline, narrow, crowded, unequal, decurrent, a few of them bifurcate at the base, edges entire: spores ovoid, smooth, hyaline, 3.5×2.5 μ: stipe long, slender, slightly enlarged above and below, cinereous, pruinose, 2–3.5 cm. long, 1.5–2.5 mm. thick.

TYPE LOCALITY: Moore Town, Jamaica.
HABITAT: On dead sticks in dense woods.
DISTRIBUTION: Jamaica, Martinique, Porto Rico, and British Honduras.

7. **Lentinus scyphoides** Pat. Bull. Soc. Myc. Fr. **15**: 195. 1899.

Pileus regular, thin, membranous, deeply depressed, 10–15 mm. broad; surface glabrous, shining, reddish-brown, margin incurved, not striate: lamellae unequal, long-decurrent, crowded, narrow, rather thick, entire, ochraceous: spores ovoid, smooth, hyaline, 4×3 μ: stipe slender, short, pruinose, ochraceous, slightly thickened below, 15–20 mm. long.

TYPE LOCALITY: Guadeloupe.
HABITAT: On dead branches on the ground.
DISTRIBUTION: Guadeloupe.

8. **Lentinus tubarius** Pat. Bull. Soc. Myc. Fr. **15**: 194. 1899.

Pileus soft, deeply depressed, solitary or gregarious, 6–8 cm. broad; surface glabrous, reddish-brown, margin striate, more or less lobed, incurved: lamellae unequal, not anastomosing, long-decurrent, crowded, very narrow, denticulate, concolorous or darker: spores ovoid, smooth, hyaline, 5×3 μ; stipe cylindric, velvety-furfuraceous, ochraceous-red, firm, solid, 10–15 cm. long.

TYPE LOCALITY: Guadeloupe.
HABITAT: On a trunk of *Rollinia Sieberi*.
DISTRIBUTION: Guadeloupe.

9. **Lentinus sulcatus** Berk. Lond. Jour. Bot. **4**: 301. 1845.

Lentinus pholiotoides Ellis & And. Bot. Gaz. **16**: 45. 1891.
Panus fulvidus Bres. Fungi Trid. **2**: 56. 1898.

Pileus fleshy, thin, tough, conic, becoming hemispheric or convex, 1.5–2.5 cm. broad; surface reddish or tawny, often darker in the center, cracking and forming irregular scales, virgate toward the margin, sulcate on the margin: lamellae subdistant, rounded behind or emarginate, slightly adnexed, obscurely dentate on the edges, white or pallid: spores oblong, smooth, hyaline, 10–18×5–9 μ; cystidia fusoid, 65–80×4–8 μ: stipe central, short, solid, sometimes narrowed downward, pruinose or slightly furfuraceous, white or pallid, 1.2–2 cm. long, 3–6 mm. thick.

TYPE LOCALITY: Ohio.
HABITAT: Crevices of dry wood or old fence rails.
DISTRIBUTION: New York to Indiana and west to Montana and Colorado; also in Europe.
ILLUSTRATION: Bres. Fungi Trid. *pl. 165*.

10. **Lentinus pyramidatus** Berk. & Curt. Proc. Am. Acad. **4**: 121. 1858.

Pileus regular, umbilicate, solitary to gregarious, 3–5 cm. broad; surface pale-yellowish or avellaneous, very rough and covered with fibers in stalked, pyramidal fascicles, margin concolorous, involute, bristly; lamellae crowded, narrow, rarely inserted, slightly decurrent, incised on the edges, white or pallid: stipe central, thick, woody, enlarged and tomentose above, furfuraceous below, usually becoming subglabrous with age, white or pallid, 3–5 cm. long, 5–10 mm. thick.

TYPE LOCALITY: Nicaragua.
HABITAT: On logs.
DISTRIBUTION: Nicaragua, Mexico, and British Honduras.

11. **Lentinus albellus** Pat. Bull. Soc. Myc. Fr. **15**: 195. 1899.

Pileus fleshy, thick, hard, convex, 5–8 cm. broad; surface white, marked with brown, spot-like scales, margin plicate-wrinkled and deflexed: lamellae decurrent, distant, broad, thick, dentate, white: stipe nearly central, hard, cylindric, armed with thick, large, distant, recurved, concolorous scales, solid, thick and tuberculose, whitish above, villose-furfuraceous and rusty-brown below, 7–10 cm. long.

TYPE LOCALITY: Guadeloupe.
HABITAT: On rotten trunks of *Anona muricata*.
DISTRIBUTION: Known only from the type locality.

12. **Lentinus crinitus** (L.) Fries, Syst. Orbis Veg. 77. 1825.

Agaricus crinitus L. Sp. Pl. ed. 2. 1644. 1763.
Agaricus Bertieri Fries, Syst. Myc. **1**: 175. 1821.
Lentinus nigripes Fries; Klotzsch, Linnaea **8**: 479. 1833.
Lentinus villosus Klotzsch, Linnaea **8**: 479. 1833.
Lentinus stupens Klotzsch, Linnaea **8**: 480. 1833.
Lentinus tener Klotzsch; Fries, Syn. Gen. Lent. 6. 1836.
Lentinus Swartzii Berk. Lond. Jour. Bot. **2**: 632. 1843.
Lentinus fumigatus Lév. Ann. Sci. Nat. III. **5**: 117. 1846.
Lentinus Schomburgkii Berk. Trans. Linn. Soc. **20**: 111. 1846.
Lentinus Leveillei Berk. Trans. Linn. Soc. **20**: 112. 1846.
Lentinus nicaraguensis Berk. & Curt. Proc. Am. Acad. **4**: 121. 1858.
Lentinus Leprieurii Mont. Ann. Sci. Nat. IV. **1**: 119. 1854.

Lentinus Wrightii Berk. & Curt. Jour. Linn. Soc. **10**: 300. 1868.
Lentinus subcervinus Berk. & Curt. Jour. Linn. Soc. **10**: 300. 1868.
Lentinus rigidulus Berk. & Curt. Jour. Linn. Soc. **10**: 300. 1868.
Pocillaria vestida Earle, Inf. An. Estac. Centr. Agron. Cuba **1**: 231. 1906.

Pileus convex-umbilicate to infundibuliform or turbinate, 4–7 cm. broad; surface pale-fawn-colored to dark-reddish-brown, densely covered with stiff, squamose, fascicled, dark-fuscous hairs, disk becoming glabrate, margin circinate, incurved: lamellae decurrent, slightly forked and anastomosing behind, rather distant, narrow, denticulate, glandular, pale-fuscous to dark-fuscous: spores narrowly ellipsoid or subcylindric, often curved, 6–8×3 μ: stipe central, firm, enlarged above and below, glabrous or nearly so, silky at the apex, paler than the pileus, 2–4 cm. long, 3 mm. thick.

TYPE LOCALITY: Jamaica.
HABITAT: On exposed logs and stumps.
DISTRIBUTION: Throughout the tropics, and in certain states bordering on the Gulf of Mexico.
ILLUSTRATIONS: Trans. Linn. Soc. **20**: *pl. 9;* Inf. An. Estac. Centr. Agron. Cuba **1**: *pl. 31, f. 2.*
EXSICCATI: Ellis & Ev. N. Am. Fungi *1600.*

13. **Lentinus strigosus** (Schw.) Fries, Syst. Orbis Veg. 77. 1825.

Agaricus crinitus Schw. Schr. Nat. Ges. Leipzig **1**: 89. 1822. Not *A. crinitus* L. 1753.
Agaricus strigosus Schw. Schr. Nat. Ges. Leipzig **1**: 89. 1822.
Lentinus Lecomtei Fries, Syst. Orbis Veg. 77. 1825.
Panus rudis Fries, Epicr. Myc. 398. 1838.
Lentinus sparsibarbis Berk. & Curt. Jour. Linn. Soc. **10**: 301. 1868.
Lentinus substrigosus P. Henn. & Shirai; P. Henn. Bot. Jahrb. **28**: 270. 1900.

Pileus thin, tough, eccentric, depressed to infundibuliform, subcespitose, 2–6 cm. broad; surface strigose with erect, fascicled, concolorous hairs, purplish, becoming ochraceous-fawn-colored, margin slightly incurved or subexpanded: context having a mild taste; lamellae not anastomosing, subglandular, decurrent, crowded, narrow, nearly entire, pallid: spores obovoid-oblong, smooth, hyaline, 6–8×3.5 μ: stipe densely strigose, subconcolorous, solid, tough, larger below, 2–3 cm. long, 3–6 mm. thick.

TYPE LOCALITY: North Carolina.
HABITAT: On old logs and stumps of both coniferous and deciduous trees.
DISTRIBUTION: Cosmopolitan.
ILLUSTRATIONS: Hard, Mushrooms *f. 179;* Lucand, Champ. Fr. *pl. 46;* Pat. Tab. Fung. *f. 637.*
EXSICCATI: Ellis, N. Am. Fungi *403;* Barth. Fungi Columb. *3526.*

14. **Lentinus strigellus** Berk. & Curt. Jour. Linn. Soc. **10**: 302. 1868.

Panus (Eupanus) guaraniticus Speg. Anal. Soc. Ci. Argent. **16**: 275. 1883.
Pocillaria simulans Earle, Inf. An. Estac. Centr. Agron. Cuba **1**: 232. 1906.
Pocillaria Palmeri Earle, Inf. An. Estac. Centr. Agron. Cuba **1**: 232. 1906.

Pileus soft and delicate, thin, subflexible when dry, infundibuliform, gregarious, 3–7 cm. broad; surface pale-reddish-brown to dark-fulvous, beset with scattered tufts of soft, fascicled, reddish-brown hairs, soon becoming nearly glabrate except on the margin, which is ciliate, not striate: lamellae crowded, rather narrow, decurrent, forking but not anastomosing, white or paler than the pileus, minutely downy, not glandular: spores ellipsoid, hyaline, 7–9×4–5 μ: stipe central, cylindric above, slightly enlarged below, concolorous, velvety-strigose throughout, solid, 1–4 cm. long, 2–5 mm. thick.

TYPE LOCALITY: Cuba.
HABITAT: On dead wood.
DISTRIBUTION: Tropical America.
ILLUSTRATION: Inf. An. Estac. Centr. Agron. Cuba **1**: *pl. 31, f. 4.*

15. **Lentinus velutinus** Fries, Linnaea **5**: 510. 1830.

Panus velutinus Fries, Epicr. Myc. 398. 1838.
Lentinus ciliatus Lév. Ann. Sci. Nat. III. **2**: 175. 1844.
Lentinus setiger Lév. Ann. Sci. Nat. III. **2**: 176. 1844.
?*Lentinus caelopus* Lév. Ann. Sci. Nat. III. **5**: 116. 1846.
Lentinus echinopus Lév. Ann. Sci. Nat. III. **5**: 118. 1846.
Lentinus siparius Berk. & Curt. Jour. Linn. Soc. **10**: 301. 1868.
Lentinus blepharodes Berk. & Curt. Jour. Linn. Soc. **10**: 301. 1868.
Lentinus (Scleroma) fallax Speg. Anal. Soc. Ci. Argent. **16**: 274. 1883.

Lentinus castaneus Ellis & Macbr. Bull. Lab. Nat. Hist. Univ. Iowa 3²: 194. 1896.
Pocillaria cinnamomea Earle, Inf. An. Estac. Centr. Agron. Cuba 1: 231. 1906.

Pileus coriaceous, thin, infundibuliform, solitary to subcespitose, 4–6 cm. broad; surface velvety to fasciculate-hispid, pale-cinnamon to brown or chestnut-brown, azonate, rarely becoming zonate, margin reflexed, ciliate, radiate-striate: lamellae entire, at times interveined, obconic-decurrent, crowded, thin, narrow, pale-flesh-colored to chestnut, velvety below: spores ellipsoid, 10×6 μ: stipe slender, tough, elongate, dry, velvety, ferruginous to chestnut, solid, cylindric above, slightly enlarged below, radicate, 6–15 cm. long, 3–5 mm. thick.

TYPE LOCALITY: Brazil.
HABITAT: On dead wood.
DISTRIBUTION: Florida and Mexico to subtemperate South America; also in oriental tropical regions.
ILLUSTRATIONS: Mont. Pl. Cell. Cuba *pl. 17, f. 3;* Inf. An. Estac. Centr. Agron. Cuba 1: *pl. 31, f. 3.*
EXSICCATI: Ule, Myc. Bras. *49a, 49b;* Rav. Fungi Am. *104.*

16. **Lentinus levis** (Berk. & Curt.) Murrill.

Panus levis Berk. & Curt. Ann. Mag. Nat. Hist. II. 12: 427. 1853.
Panus strigosus Berk. & Curt. Ann. Mag. Nat. Hist. III. 4: 296. 1859.

Pileus thin, soft, large, eccentric, suborbicular, plane to depressed, 8–20 cm. broad; surface variable, usually villous, rarely glabrous or becoming so, white, becoming yellow on drying, margin thin: lamellae entire, decurrent, broad, distant, villous behind: spores narrowly oblong, slightly curved at times, smooth, hyaline, 12×3–4 μ: stipe often eccentric, stout, white, attenuate above, tomentose, strigose below, 5–8 cm. long, 12–13 mm. thick.

TYPE LOCALITY: North Carolina.
HABITAT: On trunks and logs.
DISTRIBUTION: New England to Alabama in the eastern United States.

17. **Lentinus hirtus** (Fries) Murrill, Mycologia 3: 29. 1911.

Agaricus (Pleurotus) hirtus Fries, Linnaea 5: 508. 1830.
Panus hirtus Fries, Epicr. Myc. 398. 1838.
Lentinus submembranaceus Berk. Lond. Jour. Bot. 2: 634. 1843.
Agaricus hemispilus Lév. Ann. Sci. Nat. III. 2: 168. 1844.
Lentinus patulus Lév. Ann. Sci. Nat. III. 5: 119. 1846.
Lentinus Tanghiniae Lév. Ann. Sci. Nat. III. 5: 120. 1846.
Lentinus striatulus Lév. Ann. Sci. Nat. III. 5: 120. 1846.
Lentinus calvescens Berk. Jour. Bot. & Kew Misc. 8: 141. 1856.
Panus infundibulum Berk. & Curt. Proc. Am. Acad. 4: 121. 1858.
Panus cubensis Berk. & Curt. Jour. Linn. Soc. 10: 300. 1868.
Lentinus vellereus Berk. & Curt. Jour. Linn. Soc. 10: 301. 1868.
Lentinus estriatus Berk. & Br. Jour. Linn. Soc. 14: 44. 1873.
Agaricus (Clitocybe?) calyx Speg. Anal. Soc. Ci. Argent. 16: 243. 1883.
Lentinus (Scleroma) paraguayensis Speg. Anal. Soc. Ci. Argent. 16: 275. 1883.
Crepidotus lentinoides Earle, Inf. An. Estac. Centr. Agron. Cuba 1: 236. 1906.

Pileus coriaceous, tough, often eccentric, convex to infundibuliform, often lobed, cespitose, 8–15 cm. broad; surface smooth or striate, glabrous or velvety, hygrophanous, white, becoming yellowish to fulvous when dry, margin thin, involute: lamellae decurrent, broad, subdistant, entire, white becoming yellowish, not anastomosing: spores narrowly ellipsoid, 6–8×3–3.5 μ: stipe white becoming yellowish, fibrillose-striate or tomentose, eccentric, cylindric, dilated at the apex, solid, short, 1–2.5 cm. long, 1.3 cm. thick.

TYPE LOCALITY: Brazil.
HABITAT: On dead wood.
DISTRIBUTION: Tropical regions of the world.
ILLUSTRATION: Inf. An. Estac. Centr. Agron. Cuba 1: *pl. 35.*

18. **Lentinus hirtiformis** Murrill, sp. nov.

Pileus irregular, slightly one-sided, shallowly but broadly depressed, fleshy-tough, rather brittle when dry, solitary, 8–10 cm. broad; surface minutely fibrillose to glabrous, isabelline, slightly darker on drying, smooth, margin entire, concolorous, strongly inflexed on drying: context thin, white; lamellae decurrent nearly to the base of the stipe, narrow, crowded, white to yellowish or rosy-isabelline, very undulate when dry, edges entire: spores oblong-ellipsoid or

somewhat fusiform, smooth, hyaline, 4–5 × 1.5–2 μ: stipe eccentric owing to its position on the host, short, thick, woody, solitary, subequal, cylindric, marked with the decurrent lamellae, minutely tomentose, especially at the base, concolorous, 1–2 cm. long, about 1 cm. thick.

Type collected on dead wood in British Honduras during the winter, 1907, *Morton E. Peck* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

DOUBTFUL SPECIES

Agaricus denticulatus Schw. Schr. Nat. Ges. Leipzig **1**: 81. 1822. Found on rotten logs in North Carolina and described as brownish-yellow, squamose, 1.2 cm. broad; lamellae yellowish, elegantly serrate; stipe short, subsquamose.

Lentinus chaetoloma Fries, Nova Acta Soc. Sci. Upsal. III. **1**: 34. 1851. Described from Oersted's collections in Costa Rica. Fries does not mention a figure, and no specimens were found. It is probably a thin, almost denuded form of *L. crinitus*.

Lentinus Curtisii Sacc. & Cub.; Sacc. Syll. Fung. **5**: 595. 1887. (*Lentinus omphalodes* Berk. & Curt.; Berk. Grevillea **1**: 33. 1872. Not *L. omphalodes* Fries, 1863.) Found in Pennsylvania and described as infundibuliform, 12–13 mm. broad; lamellae entire, decurrent; stipe slender, fibrillose below, 12–28 mm. long and 2 mm. thick. Two small specimens are at Kew, collected by Michener.

Lentinus flaccidus Fries, Nova Acta Soc. Sci. Upsal. III. **1**: 226. 1851. From the island of St. Thomas; described as deeply umbilicate, glabrous, pallid, 5–8 cm. broad; lamellae decurrent, distant; stipe short, subeccentric. This apparently corresponds fairly well with forms of *L. hirtus*.

Lentinus fuligineus Berk. & Curt. Jour. Linn. Soc. **10**: 302. 1868. Found on logs in Cuba and described as infundibuliform, glabrous, fuliginous, 5 cm. broad; lamellae narrow, entire; stipe striate, glabrous, 2.5 cm. long.

Lentinus furfurosus Fries, Epicr. Myc. 391. 1838. Based on *Agaricus omphalomorphus* Mont. from Chile. Specimens from Chile sent to Fries by Montagne are still at Upsala, but none so labeled were found from Costa Rica.

Lentinus glabratus Mont. Pl. Cell. Cuba 424. 1842. Type specimens at Paris collected by Sagra in Cuba very much resemble *Lentinula detonsa*, but differ in having decurrent gills and brown, marginal hairs. It is just possible that the two species have been confused, since a specimen at Kew sent by Montagne as *Lentinus glabratus* seems referable rather to *Lentinula detonsa*.

Lentinus Micheneri Berk. & Curt. Ann. Mag. Nat. Hist. II. **12**: 427. 1853. Collected on dead wood in Pennsylvania and described as umbilicate, 5 cm. broad, glabrous, ochraceous; lamellae short-decurrent, broad, lacerate; stipe 2.5 cm. long, fusco-umbrinous, spongy-velvety.

Lentinus microspermus Peck, Bull. Torrey Club **33**: 216. 1906. Found on dead wood at Creve Coeur, Missouri. Not a *Lentinus*.

Lentinus obconicus Peck, Bull. Torrey Club **33**: 215. 1906. Found on decaying wood at Minneapolis, Minnesota. Apparently very near *L. carneotomentosus*.

Lentinus parvulus Berk. & Curt. Ann. Mag. Nat Hist. II. **12**: 426. 1853. Described from Pennsylvania as cespitose, 1–2.5 cm. broad, infundibuliform, glabrous; lamellae dichotomous, decurrent, white; stipe slender, lanuginose, 2.5 cm. long.

Lentinus pulcherrimus Sumst. Torreya **7**: 60. 1907.

Lentinus Robinsonii Mont. Syll. Crypt. 147. 1856. Found in humus near Columbus, Ohio. The description reads like that of a species of *Chanterel*.

Lentinus Sullivantii Mont. Syll. Crypt. 146. 1856. Found on rotten logs near Columbus, Ohio. The description leaves little doubt that this is the same plant as *L. levis*.

Lentinus Underwoodii Peck, Bull. Torrey Club **23**: 414. 1896. Collected at Tuskegee, Alabama, on oak wood. The type at Albany is in bad condition and no specimens have been found in the Underwood herbarium. Dr. House thinks the species is near *L. levis*, the surface showing no real scales and the lamellae being more distant than in *Lentodium squamosum*.

Lentinus xylopodius Lév. Ann. Sci. Nat. III. **5**: 119. 1846. Described from Guadeloupe and transferred to *Panus* by Fries in 1851. Pileus convex, pale-yellow, subtomentose; lamellae decurrent, distant; stipe lateral, woody, glabrous. Apparently a distorted form of *L. hirtus.*

Panus connatus Berk. Ann. Mag. Nat. Hist. II. **9**: 194. 1852. Found on rotten wood in Santo Domingo and described as cespitose-connate, glabrous, 5 cm. broad; lamellae decurrent, broad, entire; stipe tomentose, 2–5 cm. long.

Panus Troglodytes Fries, Nova Acta Soc. Sci. Upsal. III. **1**: 227. 1851. Found on trunks in the island of St. Thomas. Apparently near *L. crinitus.*

Pocillaria reflexa Earle, Inf. An. Estac. Centr. Agron. Cuba **1**: 231. 1906. Type collected in Cuba by Earle and Wilson in 1904. A small, infundibuliform plant with very narrow gills, evidently closely related to *L. crinitus;* but authentic material has not been seen.

24. **LENTINULA** Earle, Bull. N. Y. Bot. Gard. 5: 416. 1909.

Pileus coriaceous, reviving, rather thick, convex or slightly depressed: lamellae adnate: spores hyaline: stipe central, solid, woody: veil none.

Type species, *Lentinus cubensis* Berk. & Curt.

1. **Lentinula detonsa** (Fries) Murrill, Mycologia **3**: 28. 1911.

Lentinus detonsus Fries. Nova Acta Soc. Sci. Upsal III. **1**: 38. 1851.
Lentinus cubensis Berk. & Curt. Jour. Linn. Soc. **10**: 302. 1868.
Lentinus proximus Berk. & Curt. Jour. Linn. Soc. **10**: 302. 1868.
Lentinula cubensis Earle, Bull. N. Y. Bot. Gard. **5**: 417. 1909.

Pileus fleshy-coriaceous, subeccentric, plane or depressed, not umbilicate, 4–5 cm. broad; surface glabrous, not polished, alutaceous to fuscous, margin repand, involute: lamellae rounded-sinuate, crowded, thin, whitish, becoming pallid when dry: spores ellipsoid, smooth, hyaline, 6–7×4–5 μ: stipe pallid, ligneous but fragile, unequal, curved, often twisted, fibrous-strigose above, 4 cm. long and 4 mm. or more thick.

TYPE LOCALITY: Costa Rica.
HABITAT: On dead wood.
DISTRIBUTION: Louisiana, West Indies, and Costa Rica.

25. **LENTINELLUS** P. Karst. Bidr. Finl. Nat. Folk **32**: 246. 1879.

Hymenophore coriaceous, reviving, densely cespitose; pilei more or less irregular from crowding: lamellae adnate or decurrent: spores hyaline: stipes central or subcentral, connate at the base: veil none.

Type species, *Lentinus umbellatus* Fries.

1. **Lentinellus cornucopioides** (Bolt.) Murrill.

Agaricus cornucopioides Bolt. Hist. Fung. 26. 1788.
Agaricus confluens Sow. Engl. Fungi *pl. 168.* 1798.
Agaricus cochleatus Fries, Syst. Myc. **1**: 177. 1821.
Lentinus cochleatus Fries, Syn. Gen. Lent. 11. 1836.
Lentinus cornucopioides Schröt. Krypt.-Fl. Schles. **3**[1]: 555. 1889.

Pileus thin, fleshy-tough, flaccid, irregular, plane, centrally depressed or infundibuliform, cespitose, 2–7.5 cm. broad; surface glabrous, rufescent or brownish-flesh-colored when moist, paler when dry, margin often lobed: lamellae rather broad, crowded, decurrent, serrate on the edges, whitish tinged with flesh-color: spores minute, subglobose to broadly ellipsoid, 4–6 μ: stipes central, eccentric, or lateral, usually crowded and united, solid, glabrous, isabelline above, reddish-brown below, sulcate, 4–7.5 cm. long, 4–8 mm. thick.

TYPE LOCALITY: Sweden.
HABITAT: On and about old stumps or buried wood.
DISTRIBUTION: New England to North Carolina and west to Ohio and Minnesota; also in Europe.
ILLUSTRATIONS: Hard, Mushrooms *f. 183;* Pat. Tab. Fung. *f. 126;* Gill. Champ. Fr. *pl. 147 (403)*; Sow. Engl. Fungi *pl. 168.*

DOUBTFUL SPECIES

Agaricus (Pleuropus) tubaeformis Schw. Schr. Nat. Ges. Leipzig **1**: 63. 1822. Described from North Carolina as cespitose, umbilicate, pallid, 4 cm. broad; lamellae crowded, narrow, serrate; stipe eccentric, glabrous, 7–10 cm. long.

26. LENTODIUM Morgan, Jour. Cinc. Soc. Nat. Hist. **18**: 36. 1895.

Pileus tough, reviving, solitary or cespitose, usually convex: lamellae decurrent or adnate: spores hyaline: stipe central, woody: veil often evanescent, not forming a distinct annulus.

Type species, *Lentodium squamulosum* Morgan.

Stipe 6–12 mm. thick. 1. *L. squamosum.*
Stipe 2–4 mm. thick. 2. *L. tigrinum.*

1. Lentodium squamosum (Schaeff.) Murrill, Mycologia **3**: 27. 1911.

Agaricus squamosus Schaeff. Fung. Bavar. **4**: Ind. 15. 1774.
Agaricus lepideus Fries, Obs. Myc. **1**: 21. 1815.
Lentinus lepideus Fries, Syst. Orbis Veg. 78. 1825.
Lentinus suffrutescens Fries, Epicr. Myc. 393. 1838.
?*Lentinus maximus* Johnson, Bull. Minn. Acad. Sci. **1**: 338. 1878.
Lentinus magnus Peck, Bull. Torrey Club **23**: 413. 1896.
Lentinus spretus Peck, Bull. N. Y. State Mus. 105: 24. 1906.

Pileus fleshy to tough, compact, hard when dry, convex or nearly plane, sometimes slightly depressed in the center and sometimes umbonate, solitary or cespitose, 5–15 cm. broad; surface white or pale-ochraceous, the cuticle cracking and usually forming brownish, spot-like scales, which are sometimes almost black: context white, with agreeable odor; lamellae subdistant, broad, sinuate-decurrent, transversely lacerate and dentate-serrate on the edges, white; spores ellipsoid, 7–15×3–6 μ: stipe white or whitish, short, hard, solid, often pointed at the base, more or less adorned with recurved scales, sometimes eccentric, 2.5–6 cm. long, 6–12 mm. thick; annulus fixed, white, often disappearing.

TYPE LOCALITY: Bavaria.
HABITAT: Structural timbers and logs, especially of coniferous trees.
DISTRIBUTION: Throughout temperate and tropical North America; also in Europe and Asia.
ILLUSTRATIONS: Batsch, Elench. Fung. *pl. 43;* Hard, Mushrooms *f. 182;* N. Marshall, Mushr. Book *pl. 6;* McIlv. Am. Fungi *pl. 16, f. 3;* Schaeff. Fung. Bavar. *pl. 29, 30.*
EXSICCATI: Thüm. Fungi Austr. *608.*

2. Lentodium tigrinum (Bull.) Earle, Bull. N. Y. Bot. Gard. **5**: 434. 1909.

= Agaricus squamosus Huds Ed II p. 614. 1792
Agaricus tigrinus Bull. Herb. Fr. *pl. 70.* 1781.
Lentinus tigrinus Fries, Epicr. Myc. 389. 1838.
?*Lentinus Ravenelii* Berk. & Curt. Jour. Bot. & Kew Misc. **1**: 100. 1849.
Lentodium squamulosum Morgan, Jour. Cinc. Soc. Nat. Hist. **18**: 36. 1895.

Pileus thin, subcoriaceous, convex or nearly plane, umbilicate, 2.5–10 cm. broad; surface whitish, spotted with innate, hairy, brown or blackish scales: context white, often becoming reddish when wounded: lamellae narrow, close, unequal, somewhat decurrent, toothed on the edges, white or yellowish, usually deformed and united by abundant conidia-bearing mycelial threads, having the appearance of being attacked by *Hypomyces:* spores ellipsoid, 5–8×2.5–4 μ: stipe curved, slender, solid, hard, furfuraceous-squamulose, whitish, sometimes brownish toward the base, 1.5–8 cm. long, 2–4 mm. thick.

TYPE LOCALITY: France.
HABITAT: On decaying logs and stumps of both evergreen and deciduous trees.
DISTRIBUTION: Canada to Cuba and west to the Rocky Mountains; also in Europe.
ILLUSTRATIONS: Bull. Herb. Fr. *pl. 70;* Gill. Champ. Fr. *pl. 149 (406)*; Sow. Engl. Fungi *pl. 68;* Bull. Chicago Acad. Sci. 7: *pl. 6, f. 2.*
EXSICCATI: Rav. Fung. Car. **2**: *11;* Ellis & Ev. Fungi Columb. *1935.*

DOUBTFUL SPECIES

Lentinus Chama (Bosc) Fries, Epicr. Myc. 394. 1838. (*Agaricus Chama* Bosc, Ges. Nat. Freunde Berlin Mag. **5**: 85. 1811.) Found on oak wood in South Carolina.

27. **LENTODIELLUM** Murrill, Mycologia 7: 216. 1915.

Persistent, fleshy-tough, densely cespitose; pileus smooth, deeply depressed: lamellae decurrent: spores hyaline: veil scanty, evanescent: stipe central, hard, woody.

Type species, *Panus concavus* Berk.

1. **Lentodiellum concavum** (Berk.) Murrill, Mycologia 7: 216. 1915.

Panus concavus Berk. Ann. Mag. Nat. Hist. II. 9: 194. 1852.
? *Lentinus cochleatus occidentalis* Fries, Nova Acta Soc. Sci. Upsal. III. 1: 227. 1855.

Pileus tough but fleshy, infundibuliform, densely cespitose, 3–8 cm. broad; surface glabrous but not polished, chalky-white, not striate, margin strongly incurved, appendiculate: lamellae strongly decurrent, crowded, narrow, white becoming yellowish: spores oblong-ellipsoid, pointed at one end, smooth, hyaline, 6–7 × 2.5–3 μ: stipe exannulate, central or nearly so, cylindric, connate below, glabrous or subglabrous, white, solid, tough, 4–8 cm. long, 3–4 mm. thick: veil thick, white, appendiculate.

TYPE LOCALITY: Santo Domingo.
HABITAT: On dead logs and stumps.
DISTRIBUTION: Tropical America.

Subtribe 1. **LEPIOTANAE***

Hymenophore fleshy or membranous, not reviving.
- Stipe eccentric, lateral, or wanting; pileus irregular.
  - Pileus not distinctly stipitate, sessile or contracted into a stipe-like base, often resupinate when young. — 28. GEOPETALUM.
  - Pileus distinctly stipitate, the stipe either eccentric or lateral, and sometimes much reduced.
    - Lamellae conspicuously decurrent; stipe eccentric or lateral. — 29. CREPIDOPUS.
    - Lamellae adnate or sinuate; stipe usually eccentric. — 30. MICROMPHALE.
- Stipe central; pileus regular.
  - Stipe slender, tubular, with a cartilaginous cortex.
    - Margin of pileus at first straight and appressed to the stipe.
      - Pileus plicate, splitting down the backs of the lamellae. — 31. LEPTOMYCES.
      - Pileus even or striate, not splitting.
        - Pileus usually umbilicate; lamellae decurrent. — 32. OMPHALOPSIS.
        - Pileus usually convex, often umbonate; lamellae adnate or adnexed.
          - Stipe and lamellae lactiferous, bleeding when cut. — 33. GALACTOPUS.
          - Stipe and lamellae not lactiferous. — 34. PRUNULUS.
    - Margin of pileus at first incurved.
      - Lamellae decurrent; pileus usually umbilicate. — 35. OMPHALINA.
      - Lamellae adnate or adnexed. — 36. GYMNOPUS.
- Stipe stout, fleshy, of uniform texture.
  - Lamellae waxy at maturity.
    - Veil absent; pileus often bright-colored.
      - Pileus viscid, usually fragile and bright-colored. — 37. HYDROCYBE.
      - Pileus not viscid, usually firm and without brilliant colors. — 38. CAMAROPHYLLUS.
    - Veil present, glutinous, forming an annulus or reduced to squamules; pileus not bright-colored. — 39. HYGROPHORUS.
  - Lamellae fleshy, not waxy.
    - Volva and veil absent, the latter sometimes rudimentary.
      - Lamellae decurrent or adnate.
        - Spores not conspicuously verruculose or echinulate, usually ellipsoid; lamellae decurrent or adnate.
          - Hymenophore usually solitary or gregarious, subcespitose to cespitose but not wood-loving in *C. multiceps* and a few other species. — 40. CLITOCYBE.
          - Hymenophore densely cespitose and wood-loving, attached to decayed trunks or roots. — 41. MONADELPHUS.
        - Spores conspicuously verruculose or echinulate, globose; lamellae adnate. — 42. LACCARIA.
      - Lamellae sinuate; spores usually ellipsoid and smooth.
        - Pileus smooth or inconspicuously decorated with fibrils or scales. — 43. MELANOLEUCA.
        - Pileus conspicuously decorated with fibrils or scales. — 44. CORTINELLUS.
    - Volva absent, veil present, usually forming an annulus.
      - Stipe eccentric. — 45. PLEUROTUS.
      - Stipe central.
        - Lamellae adnate or adnexed. — 46. ARMILLARIA.
        - Lamellae free, varying at times to adnexed or adnate.

* The first part of the key to this subtribe, containing species with the hymenophore tough to woody, reviving, appears on page 237 of this volume.

Spores hyaline, rarely tinged with brown.
Pileus viscid. 47. LIMACELLA.
Pileus dry. 48. LEPIOTA.
Spores green when fresh, brown in herbarium specimens. 49. CHLOROPHYLLUM.
Volva present, veil absent. 50. VAGINATA.
Volva and veil both present. 51. VENENARIUS.

28. GEOPETALUM Pat. Hymén. Eur. 127. 1887.

Phyllotus P. Karst. Bidr. Finl. Nat. Folk **32**: 92. 1879. Not *Phyllota* Benth. 1837.

Pileus fleshy or membranous, not reviving, without a distinct stipe, sessile or contracted into a stipe-like base, often resupinate when young: lamellae usually radiating from a lateral or eccentric point: spores hyaline: veil none.

Type species, *Geopetalum petaloides* (Bull.) Pat.

Species occurring in temperate North America.
Pileus 0.5–1.5 cm. broad.
Pileus rufous, reniform, 12 mm. broad. 1. *G. Blakei.*
Pileus white.
Spores globose, 4–5.5 μ; surface shining-white. 2. *G. candidissimum.*
Spores ellipsoid.
Spores less than 7 μ long.
Species confined to the eastern United States. 3. *G. semicaptum.*
Species confined to the Pacific coast. 4. *G. oregonense.*
Spores more than 7 μ long.
Species growing on soil; spores 9–11 × 4–5 μ. 5. *G. geophilum.*
Species not growing on soil; spores 7–9 × 2–4 μ. 6. *G. septicum.*
Pileus 2 cm. or more broad.
Lamellae not crowded.
Pileus 2–3 cm. broad; surface glabrous. 7. *G. albescens.*
Pileus 5–7 cm. broad; surface slightly tomentose. 8. *G. alliaceum.*
Lamellae crowded.
Spores globose or subglobose.
Pileus at first resupinate; spores 4–7.5 μ. 9. *G. abietinum.*
Pileus not at first resupinate; spores 2–4 μ. 10. *G. angustatum.*
Spores ellipsoid or ovoid.
Pileus 4–9 cm. broad; species growing on the ground. 11. *G. petaloides.*
Pileus 2–5 cm. broad; species growing on dead wood.
Pileus white, 2 cm. broad. 12. *G. densifolium.*
Pileus grayish-brown, 5 cm. broad. 13. *G. betulinum.*
Species occurring in tropical North America.
Pileus less than 1 cm. broad, rarely exceeding this size in *G. copulatum.*
Pileus resupinate.
Pileus 1–2 mm. broad. 14. *G. inconspicuum.*
Pileus 3–8 mm. broad. 15. *G. subelatinum.*
Pileus not normally resupinate.
Surface white or pale-yellowish.
Surface white; lamellae whitish-pruinose on the edges. 16. *G. haedinum.*
Surface pale-ochraceous; lamellae not whitish-pruinose on the edges. 17. *G. copulatum.*
Surface ferruginous. 18. *G. tremelliforme.*
Pileus more than 1 cm. broad.
Surface white.
Surface translucent, glabrous; pileus reniform. 19. *G. catephes.*
Surface milk-white, pubescent; pileus flabelliform. 20. *G. subhaedinum.*
Surface white to pale-fuscous, spongy-pubescent to glabrous; pileus flabelliform or spatulate. 21. *G. semitectum.*
Surface fuscous, spongy-tomentose; lamellae flavous. 22. *G. flavolanatum.*

1. Geopetalum Blakei (Berk. & Curt.) Murrill.

Agaricus (*Pleurotus*) *Blakei* Berk. & Curt. Ann. Mag. Nat. Hist. III. **4**: 288. 1859.
Pleurotus Blakei Sacc. Syll. Fung. **5**: 368. 1887.

Pileus reniform, conchate, 12 mm. broad; surface glabrous, puberulent behind, rufous: lamellae interveined, distant, broad, ventricose, thin, subconcolorous, paler: stipe wanting.

TYPE LOCALITY: Maine.
HABITAT: On dead *Abies.*
DISTRIBUTION: Known only from the type locality.

2. Geopetalum candidissimum (Berk. & Curt.) Murrill.

Agaricus (*Pleurotus*) *candidissimus* Berk. & Curt. Ann. Mag. Nat. Hist. III. **4**: 288. 1859.
Pleurotus candidissimus Sacc. Syll. Fung. **5**: 368. 1887.

Pileus delicate, affixed by a few hairs, sessile, reniform or dimidiate, reaching 1.5 cm.

broad; surface snow-white to milk-white, glabrous, margin entire to undulate, concolorous: lamellae not interveined, of medium distance, moderately broad, white: spores globose, smooth, hyaline, 4–5.5 μ.

TYPE LOCALITY: Maine.
HABITAT: Dead deciduous logs and sticks.
DISTRIBUTION: Maine to the mountains of Virginia.

3. **Geopetalum semicaptum** (Berk. & Curt.) Murrill.

Agaricus (*Pleurotus*) *semicaptus* Berk. & Curt. Ann. Mag. Nat. Hist. III. 4: 287. 1859.
Pleurotus semicaptus Sacc. Syll. Fungi. 5: 384. 1887.

Pileus irregular, resupinate to short-reflexed, gregarious, 8 mm. broad; surface white, pulverulent, margin crenate: lamellae entire, distant, narrow, concolorous: spores cymbiform, 6 μ.

TYPE LOCALITY: New England.
HABITAT: On dead branches of *Betula*.
DISTRIBUTION: New England.

4. **Geopetalum oregonense** Murrill, Mycologia 4: 215. 1912.

Pileus thin, sessile, conchate to flabelliform, convex to expanded, milk-white throughout, gregarious on dead wood, reaching 1 cm. broad; surface smooth, glabrous, margin entire, incurved when young and on drying: lamellae subdistant, inserted, rather narrow, white, slightly yellowish when dry: spores pip-shaped, smooth, hyaline, 6–7 $\times$ 3–4 μ: stipe wanting, the pileus attached to a small, subglobose, white, tomentose mass.

TYPE LOCALITY: Mill City, Oregon.
HABITAT: On fallen dead deciduous branches and logs.
DISTRIBUTION: Oregon and California.

5. **Geopetalum geophilum** Murrill, sp. nov.

Pileus thin, fleshy, sessile, more or less resupinate, conchate, 5–15 mm. broad; surface smooth, glabrous, white, dry, mycelioid behind, margin thin, concolorous, entire or somewhat lobed: lamellae of medium breadth and distance, white when fresh, becoming yellowish-brown and fragile on drying: spores oblong-ellipsoid, smooth, hyaline, 9–11 $\times$ 4–5 μ.

Type collected on soil by the side of a road in woods near Seattle, Washington, October 20–November 1, 1911, *W. A. Murrill 702* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

6. **Geopetalum septicum** (Fries) Murrill.

Agaricus pubescens Sow. Engl. Fungi *pl. 321.* 1803. Not *A. pubescens* Schrad. 1794.
Agaricus septicus Fries, Syst. Myc. 1: 92. 1821.
Pleurotus septicus Quél. Champ. Jura Vosg. 79. 1872.
Geopetalum subsepticum Murrill, Mycologia 4: 215. 1912.

Pileus small, thin, nearly plane, dimidiate and conchate to subcircular or reniform, sessile or with a short, white, pubescent stipe or stipe-like base, gregarious, 6–12 mm. broad; surface smooth, pubescent or subpulverulent to glabrous, pure-white, margin undulate or lobed, inflexed on drying: lamellae rather broad, subdistant, inserted, white, yellowish-brown on drying: spores narrowly ellipsoid, smooth, hyaline, 7–9 $\times$ 2–4 μ.

TYPE LOCALITY: Europe.
HABITAT: On decaying deciduous wood, leaves, and herbaceous stems.
DISTRIBUTION: Northern United States west to Washington; also in Europe.
ILLUSTRATIONS: Cooke, Brit. Fungi *pl. 259 (288) B;* Gill. Champ. Fr. *pl. 545;* Sow. Engl. Fungi *pl. 321.*
EXSICCATI: Ellis & Ev. N. Am. Fungi *2727.*

7. **Geopetalum albescens** Murrill, sp. nov.

Pileus very soft, fleshy, appearing water-soaked, dimidiate to subcircular, thin, convex, sessile, attached by a narrow base, 2–3 cm. broad; surface hygrophanous, very dull whitish, becoming milk-white on drying, glabrous, lightly striate for some distance from the margin, which is thin, entire, concolorous, and usually upturned in fresh plants: context very thin, white; lamellae rather broad, not crowded, inserted, concolorous with the surface, becoming

yellowish-white on drying: spores copious, ellipsoid, smooth, hyaline, rounded at both ends, 7–9 × 4–5 μ, the spore-print assuming a salmon tint on exposure.

Type collected on a dead birch stump in thin woods in the New York Botanical Garden, September 4, 1915, *W. A. Murrill* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

8. **Geopetalum alliaceum** (Berk. & Curt.) Murrill.

Panus alliaceus Berk. & Curt. Ann. Mag. Nat. Hist. II. **12**: 427. 1853.

Pileus sessile, subeffused behind, confluent at times, 5–7 cm. broad; surface white, becoming yellowish-brown, slightly tomentose, margin entire or undulate, involute, hispid, rough: lamellae attenuate behind, subdistant, white, becoming yellowish-brown: spores ellipsoid, curved, smooth, hyaline, 5–6 × 3 μ.

TYPE LOCALITY: South Carolina.
HABITAT: Decayed willow logs.
DISTRIBUTION: Known only from the type locality.

9. **Geopetalum abietinum** (Schrad.) Murrill.

Agaricus abietinus Schrad. Spic. Fl. Germ. 132. 1794.
Agaricus porrigens Pers. Obs. Myc. **1**: 54. 1796.
Pleurotus porrigens Gill. Champ. Fr. **1**: 334. 1876.
Pleurotus niphetus Ellis, Bull. Torrey Club **9**: 18. 1882.
Geopetalum porrigens Murrill, Mycologia **4**: 215. 1912.

Pileus rather thin, at first resupinate and suborbicular, then reflexed and prolonged, obovate, subelliptic, or ear-shaped, often longer than broad, sessile, 2.5–7.5 cm. broad; surface glabrous or villose-tomentose toward the base, pure-white, margin involute when young, sometimes lobed in large specimens: lamellae narrow, linear, thin, crowded, sometimes slightly forked or anastomosing at the base, white: spores subglobose, smooth, hyaline, 4–7.5 μ.

TYPE LOCALITY: Germany.
HABITAT: On much decayed wood of pine, hemlock, and other conifers.
DISTRIBUTION: Newfoundland to West Virginia and west to Washington; also in Europe.
ILLUSTRATION: Cooke, Brit. Fungi *pl. 259 (288) A*.
EXSICCATI: Ellis, N. Am. Fungi *904*.

10. **Geopetalum angustatum** (Berk.) Murrill.

Panus angustatus Berk. Jour. Bot. & Kew Misc. **6**: 318. 1847.
Pleurotus petaloides Peck, Ann. Rep. N. Y. State Mus. **39**: 64. 1887. Not *P. petaloides* (Bull.) Quél. 1872.
Pleurotus stratosus Atk. Jour. Myc. **8**: 116. 1902.

Pileus small, thin, rather tough, spatulate or flabelliform, narrowed behind into a stipe-like base, 2–5 cm. broad; surface white, dirty-white, or yellow, somewhat gelatinous when moist, slightly pubescent, farinaceous behind: lamellae decurrent, much crowded, very narrow, minutely pubescent, white, yellowish when dry: spores globose, smooth, hyaline, 3–4 μ: cystidia fusoid-oblong, 35–45 × 12 μ.

TYPE LOCALITY: Waynesville, Ohio.
HABITAT: On decayed deciduous wood.
DISTRIBUTION: Canada to Louisiana and west to Michigan.

11. **Geopetalum petaloides** (Bull.) Pat. Hymén. Eur. 127. 1887.

Agaricus petaloides Bull. Herb. Fr. *pl. 226*. 1784.
Agaricus anomalus Pers. Obs. Myc. **1**: 55. 1796.
Agaricus spathulatus Pers. Syn. Fung. 479. 1801.
Pleurotus petaloides Quél. Champ. Jura Vosg. 226. 1872.
Pleurotus geogenius Quél. Ench. Fung. 149. 1886.
Geopetalum geogenium Pat. Hymén. Eur. 127. 1887.

Pileus fleshy, erect, fan-shaped or semi-infundibuliform, often divided nearly to the base, at other times wavy or lobed on the margin, which is at first incurved, 4–9 cm. broad; surface smooth, glabrous above, whitish-pruinose behind, avellaneous-isabelline to chestnut-brown, dry or viscid according to the weather: context white, with a farinaceous odor and taste; lamellae white, narrow, much crowded, sometimes forked behind, decurrent to the base of the stipe or nearly so: spores subovoid, smooth, hyaline, 7–8 × 3.5–4 μ; cystidia fusoid, hyaline,

60–70 × 12–18 μ: stipe always lateral with a dorsal groove, short, white, pruinose, 1–3 cm. long, 5–15 mm. thick.

TYPE LOCALITY: France.
HABITAT: On the ground, usually among grass in the open and rarely in the woods, sometimes attached to buried wood.
DISTRIBUTION: New York to Washington and south to Texas; also in Europe.
ILLUSTRATIONS: Atk. Stud. Am. Fungi *f. 110;* Mycologia 4: *pl. 56, f. 6;* Pers. Obs. Myc. 1: *pl. 4, f. 1;* Bres. Fungi Trid. *pl. 50;* Bull. Herb. Fr. *pl. 226;* Richon & Roze, Atl. Champ. *pl. 45,*

12. **Geopetalum densifolium** Murrill, Mycologia 4: 215. 1912.

Pileus fleshy, sessile, conchate to applanate, flabelliform, rather broadly attached, white throughout, gregarious, reaching 2 cm. broad; surface finely pubescent to subglabrous, smooth, margin entire, slightly inflexed on drying: lamellae very broad and very crowded, flaccid, overlapping on drying, white to isabelline, powdered with the spores, inserted, plane: spores ellipsoid, smooth, hyaline, 6–7 × 3.5 μ.

TYPE LOCALITY: Seattle, Washington.
HABITAT: On dead deciduous wood in woods.
DISTRIBUTION: Known only from the type locality.

13. **Geopetalum betulinum** (Peck) Murrill.

Panus betulinus Peck, Bull. Torrey Club **23**: 413. 1896.

Pileus thin, fleshy, suborbicular or dimidiate, subplane, prolonged behind into a short, stipe-like base, 5 cm. broad; surface smooth, glabrous, with tawny hairs at the base, grayish-brown, darker toward the base: lamellae decurrent, close, narrow, whitish: spores 4–5 × 1.5–2 μ.

TYPE LOCALITY: Newfoundland.
HABITAT: On decaying wood of birch.
DISTRIBUTION: Known only from the type locality.

14. **Geopetalum inconspicuum** (Massee) Murrill.

Pleurotus inconspicuus Massee, Jour. Bot. **30**: 196. 1892.

Pileus very thin, pellucid, resupinate, affixed by the whitish-villose base, nearly plane, suborbicular, gregarious, 1–2 mm. broad; surface white: lamellae concurrent, distant, narrow, white: spores ellipsoid, apiculate at the base, 6 × 3 μ.

TYPE LOCALITY: Walliboo Valley, St. Vincent.
HABITAT: On dry twigs.
DISTRIBUTION: Known only from the type locality.
ILLUSTRATIONS: Jour. Bot. **30**: *pl. 325, f. 8, 9.*

15. **Geopetalum subelatinum** Murrill, sp. nov.

Pileus resupinate, soft, watery, expanded, contracted at times into a whitish, fibrillose, stipe-like base, 3–8 mm. broad; surface subglabrous, whitish: lamellae whitish, crowded, narrow.

Type collected on decayed wood five miles east of Santiago de las Vegas, Cuba, September 11, 1904, *F. S. Earle 192* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Cuba.

16. **Geopetalum haedinum** (Berk. & Curt.) Murrill.

Agaricus (Pleurotus) haedinus Berk. & Curt. Jour. Linn. Soc. **10**: 288. 1868.
Pleurotus haedinus Sacc. Syll. Fung. **5**: 369. 1887.

Pileus flabelliform or spatulate, sometimes slightly lobed, sessile by a narrow base, 6–10 mm. broad; surface white, opaque, resembling kid leather: lamellae narrow, rather crowded, subventricose, pallid, whitish-pruinose on the edges: stipe wanting.

TYPE LOCALITY: Cuba.
HABITAT: On dead wood.
DISTRIBUTION: Known only from the type locality.

17. **Geopetalum copulatum** (Ehrenb.) Murrill.

Panus copulatus Ehrenb. Horae Phys. Berol. 86. 1820.
Panus subflabellatus P. Henn. Hedwigia **36**: 206. 1897.
Claudopus byssisedoides P. Henn. Hedwigia **43**: 183. 1904.

Pileus thin, rather tough, imbricate, usually sessile, often varying to resupinate on the under side of a log, normally flabelliform or attenuate-cuneiform, whitish-mycelioid behind 5–15 mm. broad; surface pale-ochraceous to fuscous-pallid, finely pubescent, becoming discolored on the margin on drying: lamellae narrow, thin, crowded, white, becoming discolored: spores ellipsoid, smooth, hyaline, 7 × 4 μ.

TYPE LOCALITY: Brazil.
HABITAT: On cocoanut petioles, bamboo trunks, and other kinds of dead wood in shaded places.
DISTRIBUTION: Cuba and Honduras; also in Venezuela and Brazil.
ILLUSTRATION: Horae Phys. Berol. *pl. 81, f. 5.*

18. **Geopetalum tremelliforme** Murrill, sp. nov.

Pilei somewhat tough, becoming very firm on drying, sessile, flabelliform, 3–5 mm. broad, closely imbricate in a *Tremella*-like cluster about 8 mm. in diameter; surface smooth, glabrous, hygrophanous, ferruginous, margin entire, concolorous: lamellae broad, distant, inserted, ochroleucous, the edges unusually thick for the genus: stipe wanting.

Type collected on dead wood in Castleton Gardens, Jamaica, December 14–15, 1908, *W. A. & Edna L. Murrill 75* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

19. **Geopetalum catephes** (Berk.) Murrill.

Agaricus (*Pleurotus*) *catephes* Berk. Ann. Mag. Nat. Hist. II. **9**: 192. 1852.
Pleurotus catephes Sacc. Syll. Fung. **5**: 365. 1887.

Pileus delicate, horizontal, reniform, attenuate to a stipe, but emarginate behind, 1.25–2.5 cm. broad; surface translucent, glabrous: lamellae not interveined, subdecurrent, distant, rather narrow.

TYPE LOCALITY: Santo Domingo.
HABITAT: In woods.
DISTRIBUTION: Known only from the type locality.

20. **Geopetalum subhaedinum** Murrill, sp. nov.

Pileus usually broadly sessile, effused-reflexed at times, flabelliform, imbricate, rarely laterally connate, 2 cm. broad; surface milk-white, soft, pubescent, margin concolorous, sometimes lobed: context soft and fleshy, fragile on drying, the odor farinaceous; lamellae long, narrow, crowded, white: spores ellipsoid, smooth, hyaline, granular, 7 × 4 μ.

Type collected on a dead log at Xuchiles, near Cordoba, Mexico, January 17, 1910, *W. A. & Edna L. Murrill 1134* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Mexico.

21. **Geopetalum semitectum** (Berk. & Curt.) Murrill.

Agaricus (*Pleurotus*) *semitectus* Berk. & Curt. Jour. Linn. Soc. **10**: 288. 1868.
Pleurotus semitectus Sacc. Syll. Fung. **5**: 378. 1887.

Pileus flabelliform or spatulate, sometimes lobed, 2.5–5 cm. broad; surface white to pale-fuscous, spongy-pubescent to glabrous: lamellae subdecurrent, narrow, very crowded, concolorous: stipe very short or obsolete.

TYPE LOCALITY: Cuba.
HABITAT: On logs in dense woods.
DISTRIBUTION: Cuba, and possibly Guadeloupe.

22. **Geopetalum flavolanatum** (Berk. & Curt.) Murrill.

Agaricus (*Pleurotus*) *flavolanatus* Berk. & Curt. Jour. Linn. Soc. **10**: 288. 1868.
Pleurotus flavolanatus Sacc. Syll. Fung. **5**: 376. 1887.

Pileus sessile, convex, 2.5 cm. broad; surface spongy-tomentose, fuscous, resembling that of some species of *Crepidotus:* lamellae subdistant, flavous, not interveined: spores hyaline: stipe wanting.

TYPE LOCALITY: Cuba.
HABITAT: On sticks.
DISTRIBUTION: Known only from the type locality.

DOUBTFUL SPECIES

Agaricus elatinus Pers. Myc. Eur. **3**: 18. 1828. The specimens from Cuba so determined by Berkeley have been referred to *Urospora subelatina*.

Lentinus friabilis Fries, Syn. Gen. Lent. 12. 1836. A temperate European species erroneously reported from Cuba, Guiana, and elsewhere in tropical America.

Panus foetens Fries, Epicr. Myc. 399. 1838. Reported from Mexico and South Carolina. Specimens at Paris collected in South Carolina by Ravenel are hispid-tomentose, with distant gills, which are now reddish-brown, resembling *Panus alliaceus*.

Pleurotus chioneus (Pers.) Sacc. Syll. Fung. **5**: 384. 1887. (*Agaricus chioneus* Pers. Myc. Eur. **3**: 28. 1828. Not *A. chioneus* Fries. 1815.) Reported from Massachusetts by Frost and from Alabama by Atkinson. The species is probably not distinct from *G. septicum*.

Pleurotus cyphellaeformis (Berk.) Sacc. Syll. Fung. **5**: 379. 1887. (*Agaricus* (*Pleurotus*) *cyphellaeformis* Berk. Outl. Brit. Fungol. 138. 1860.) Reported from South Carolina by Ravenel, but the American specimens do not seem to correspond with the types at Kew.

Pleurotus flabellatus (Berk & Br.) Sacc. Syll. Fung. **5**: 369. 1887. (*Agaricus* (*Pleurotus*) *flabellatus* Berk. & Br. Jour. Linn. Soc. **11**: 528. 1869.) A Ceylon species reported by Massee from St. Vincent.

Pleurotus fluxilis (Fries) P. Karst. Bidr. Finl. Nat. Folk **32**: 90. 1879. (*Agaricus fluxilis* Fries, Syst. Myc. **1**: 189. 1821.) Reported from North Carolina by Curtis.

Pleurotus Hobsoni (Berk.) Sacc. Syll. Fung. **5**: 382. 1887. (*Agaricus* (*Pleurotus*) *Hobsoni* Berk. Outl. Brit. Fungol. 138. 1860.) An English species reported from Dominica by Miss A. L. Smith.

Pleurotus limpidoides P. Karst. Medd. Soc. Faun. Fl. Fenn. **6**: 7. 1881. Reported from Nebraska by Clements.

Pleurotus limpidus (Fries) Sacc. Syll. Fung. **5**: 364. 1887. (*Agaricus* (*Pleurotus*) *limpidus* Fries, Epicr. Myc. 135. 1838.) A temperate European species reported by Fries from Costa Rica. Oersted's colored figure may be seen at Copenhagen, but no specimens were found.

Pleurotus mitis (Pers.) Quél. Champ. Jura Vosg. 226. 1872. (*Agaricus mitis* Pers. Obs. Myc. **1**: 54. 1796.) Reported from New York by Peck on prostrate trunks of balsam. The lamellae of Peck's specimens have been destroyed by insects. The specimens are nearly as white as *G. candidissimum* and about twice as large.

Pleurotus perpusillus (Fries) Sacc. Syll. Fung. **5**: 383. 1887. (*Agaricus perpusillus* Fries, Syst. Myc. **1**: 192. 1821.) Reported from Connecticut by Sprague and from North Carolina by Curtis. Typical European specimens resemble *G. candidissimum* in form and size, but have much more distant lamellae.

Pleurotus pinsitus (Fries) Sacc. Syll. Fung. **5**: 374. 1887. (*Agaricus pinsitus* Fries, Syst. Myc. **1**: 184. 1821.) Reported from Pennsylvania by Schweinitz and from Ohio by Lea. It is referred by some authors to *Crepidotus mollis*.

Pleurotus planus (Alb. & Schw.) Quél. Ench. Fung. 149. 1886. (*Agaricus planus* Alb. & Schw. Consp. Fung. 230. 1805. Not *A. planus* Bolt. 1788.) Reported from North Carolina by Schweinitz.

Pleurotus semisupinus (Berk. & Br.) Sacc. Syll. Fung. **5**: 373. 1887. (*Agaricus* (*Pleurotus*) *semisupinus* Berk. & Br. Jour. Linn. Soc. **11**: 529. 1869.) A Ceylon species reported from Dominica by Miss A. L. Smith.

Pleurotus tremulus (Schaeff.) Quél. Champ. Jura Vosg. 79. 1872. (*Agaricus tremulus* Schaeff. Fung. Bavar. **4**: Ind. 53. 1774.) Described from Bavaria and reported from Poughkeepsie, New York, by Gerard, and from Pennsylvania by Schweinitz. The species approaches *G. petaloides*, but is gray, with nearly globose spores, and occurs among mosses in moist places. Gerard's two specimens at Albany are very thin, gray, attached to moss, about 3 × 2 cm., and resemble large forms of *Dictyolus muscigenus* Quél. Unfortunately, the lamellae are glued to the sheet and cannot be examined.

Pleurotus Zippelii (Lév.) Sacc. Syll. Fung. **5**: 382. 1887. (*Agaricus Zippelii* Lév. Ann. Sci. Nat. III. **2**: 171. 1844.) A species native to Java, which has been reported from Santo Domingo.

29. **CREPIDOPUS** (Nees) S. F. Gray, Nat. Arr. Brit. Pl. **1**: 616. 1821.

Agaricus § *Crepidopus* Nees, Syst. Pilze Schw. 195. 1817.

Pileus fleshy, putrescent, usually flabelliform in general outline: lamellae conspicuously decurrent: spores hyaline or becoming lilac-tinted: stipe eccentric or lateral, solid, sometimes much reduced: veil none.

Type species, *Agaricus ostreatus* Jacq.

Species occurring in temperate North America.
- Pileus minute, 2–4 mm. broad. — 1. *C. minutus.*
- Pileus much larger, 2.5–12 cm. broad.
  - Pileus dingy-yellow to olivaceous; spores 5 × 2.5 μ. — 2. *C. serotinus.*
  - Pileus usually white or whitish, or with brownish hues; spores 7–11 × 4–5 μ.
    - Stipe typically short and conspicuously hairy. — 3. *C. ostreatus.*
    - Stipe typically longer and glabrous, but varying toward that of the above species. — 4. *C. cornucopiae.*

Species occurring in tropical North America.
- Pileus becoming reddish on drying; lamellae very distant and interveined; stipe very short, lateral. — 5. *C. hemiphlebius.*
- Pileus white or whitish, often becoming yellowish on drying.
  - Pileus 2–4 cm. broad; stipe 4–8 mm. long. — 6. *C. Eugeniae.*
  - Pileus 4–6 cm. broad; stipe 1–5 cm. long.
    - Lamellae narrow, crowded; stipe 4–5 cm. long. — 7. *C. caveatus.*
    - Lamellae rather broad, subdistant.
      - Stipe glabrous, 1–2 cm. long. — 8. *C. commiscibilis.*
      - Stipe tomentose, 2.5–5 cm. long. — 9. *C. connatus.*

1. **Crepidopus minutus** (Peck) Murrill.

Pleurotus minutus Peck, Ann. Rep. N. Y. State Mus. **55**: 949. 1902.

Pileus resupinate or reflexed with age, reniform or suborbicular, the center often depressed, 2–4 mm. broad; surface white, flocculose-pruinose, margin involute: lamellae unequal, decurrent, distant, very narrow, white or whitish: stipe short, eccentric, curved, pruinose, whitish, whitish-mycelioid at the base, 2 mm. long.

TYPE LOCALITY: Loon Lake, New York.
HABITAT: On rotten birch wood.
DISTRIBUTION: New York.

2. **Crepidopus serotinus** (Schrad.) Murrill, Mycologia **4**: 216. 1912.

Agaricus serotinus Schrad. Spic. Fl. Germ. 130. 1794.
Agaricus serotinoides Peck, Ann. Rep. N. Y. State Cab. **23**: 86. 1872.
Pleurotus serotinus Quél. Ench. Fung. 149. 1886.

Pileus fleshy, compact, convex or nearly plane, dimidiate-reniform or suborbicular, solitary or cespitose and imbricate, 2.5–7.5 cm. broad; surface viscid when young and moist, variously colored, dingy-yellow, reddish-brown, greenish-brown, or olivaceous, margin at first involute: lamellae close, determinate, whitish or yellowish: cystidia 11–13 μ thick, with yellowish-brown sap; spores minute, ellipsoid, 5 × 2.5 μ: stipe very short, lateral, thick, yellowish beneath and minutely tomentose or squamulose with blackish points.

TYPE LOCALITY: Germany.
HABITAT: Dead trunks of birch, beech, and other deciduous trees.
DISTRIBUTION: Greenland to North Carolina and west to British Columbia and Washington; also in Europe.
ILLUSTRATION: Cooke, Brit. Fungi *pl. 258 (284) B.*
EXSICCATI: Ellis & Ev. N. Am. Fungi *3504;* Underw. & Cook, Illust. Fungi *2.*

3. **Crepidopus ostreatus** (Jacq.) S. F. Gray, Nat. Arr. Brit. Pl. **1**: 616. 1821.

Agaricus ostreatus Jacq. Fl. Austr. **2**: 3. 1774.
Pleurotus ostreatus Quél. Champ. Jura Vosg. 77. 1872.
Crepidopus subsapidus Murrill, Mycologia **4**: 216. 1912.

Pileus fleshy, soft, convex or slightly depressed behind, subdimidiate, often cespitose-imbricate, 5–15 cm. broad; surface moist, silky to glabrous, white, whitish-cinereous, or brownish: context white, mild, edible; lamellae broad, decurrent, subdistant, anastomosing at the

base, white or whitish: spores oblong, smooth, white or lilac-tinted, 8–12 × 3–4 μ: stipe, when present, usually very short, firm, eccentric or lateral, more or less strigose-hairy at the base.

TYPE LOCALITY: Austria.
HABITAT: Decaying stumps and trunks of deciduous trees.
DISTRIBUTION: Throughout temperate North America; also in Europe.
ILLUSTRATIONS: Boudier, Ic. Myc. **1**: *pl. 79;* Gill. Champ. Fr. *pl. 246 (541);* Jacq. Fl. Austr. **2**: *pl. 104;* Sow. Engl. Fungi *pl. 241.*
EXSICCATI: Rav. Fungi Car. **2**: *3.*

4. **Crepidopus cornucopiae** (Paulet) Murrill.

Dendrosarcus cornucopiae Paulet, Traité Champ. **2**: 119. 1793 (description) and *pl. 28.* 1812? (latin name).
Agaricus cornucopioides Pers. Myc. Eur. **3**: 37. 1828.
Agaricus (*Pleurotus*) *sapidus* Schulzer; in Kalchbr. Ic. Hymen. Hung. 1873. Not *A. sapidus* Pers. 1828.
Pleurotus cornucopiae Quél. Ench. Fung. 148. 1886.
Pleurotus similis Peck, Ann. Rep. N. Y. State Mus. **53**: 841. 1900.

Pileus eccentric or lateral, rarely sessile, irregular, convex or depressed on the disk, generally cespitose, 5–12 cm. broad; surface glabrous, varying from white to yellowish or brownish: context white, edible, the taste agreeable, slightly farinaceous; lamellae rather broad, subdistant, decurrent, usually anastomosing at the base, whitish: spores oblong, smooth, white, becoming pale-lilac, about 8.5–11 × 4–5 μ: stipe white or whitish, firm, entirely glabrous or slightly tomentose at the base, solid, straight or curved, 2.5–5 cm. long, 6–16 mm. thick.

TYPE LOCALITY: France.
HABITAT: Dead deciduous wood of various kinds.
DISTRIBUTION: Canada to Alabama and west to the Rocky Mountains; also in Europe.
ILLUSTRATIONS: Ann. Rep. N. Y. State Mus. **48**: *pl. 26, f. 5–9* (as *P. ostreatus*), *pl. 27;* Boudier, Ic. Myc. **1**: *pl. 77;* Bres. Fungi Trid. *pl. 115;* Cooke, Brit. Fungi. *pl. 1155;* Gill. Champ. Fr. *pl. 544;* Hard, Mushrooms *f. 123;* Paulet, Traité Champ. *pl. 28;* Richon & Roze, Atl. Champ. *pl. 48, f. 6–9.*
EXSICCATI: Shear, N. Y. Fungi *10.*

5. **Crepidopus hemiphlebius** (Berk. & Curt.) Murrill.

Agaricus (*Pleurotus*) *hemiphlebius* Berk. & Curt. Jour. Linn. Soc. **10**: 288. 1868.
Pleurotus hemiphlebius Sacc. Syll. Fung. **5**: 369. 1887.

Pileus thin, flabelli orm, 4 cm. broad; surface very glabrous, reddish when dry: lamellae very distant, thin, acute, interveined: stipe lateral, very short, cylindric, pruinose.

TYPE LOCALITY: Cuba.
HABITAT: On dead wood.
DISTRIBUTION: Known only from the type locality.

6. **Crepidopus Eugeniae** (Earle) Murrill.

Geopetalum Eugeniae Earle, Inf. An. Estaç. Centr. Agron. Cuba **1**: 234. 1906.

Pileus thin, expanded, suborbicular or broadly reniform, solitary or cespitose, 2–4 cm. broad; surface white, often brownish at the base, dry, fibrillose, margin glabrate, not striate: lamellae discrete, decurrent, subdistant, narrow but subventricose, white: spores ellipsoid, curved, 5 × 3 μ: stipe lateral or nearly so, cylindric, densely fibrillose, whitish, solid, 4–8 mm. long, 2 mm. thick.

TYPE LOCALITY: Santiago de las Vegas, Cuba.
HABITAT: On dead trunks and roots of *Eugenia Jambos.*
DISTRIBUTION: Known only from the type locality.
ILLUSTRATION: Inf. An. Estaç. Centr. Agron. Cuba **1**: *pl. 32, f. 3.*

7. **Crepidopus caveatus** (Berk. & Curt.) Murrill.

Agaricus (*Pleurotus*) *caveatus* Berk. & Curt. Jour. Linn. Soc. **10**: 287. 1868.
Pleurotus caveatus Saac. Syll. Fung. **5**: 353. 1887.

Pileus depressed to infundibuliform, subcircular, usually cespitose, 5 cm. broad; surface white, becoming yellowish on drying, margin slightly striate, at times lobed: lamellae decurrent, white or whitish, narrow, crowded: stipe eccentric, glabrous, solid, dilated above, whitish-mycelioid at the base, 4–5 cm. long, 3–5 mm. thick.

TYPE LOCALITY: Cuba.
HABITAT: On rotten logs and dead standing trunks.
DISTRIBUTION: Cuba and Jamaica; also in Guiana.

8. **Crepidopus commiscibilis** (Berk. & Curt.) Murrill.

Agaricus (Pleurotus) commiscibilis Berk. & Curt. Jour. Linn. Soc. **10**: 287. 1868.
Pleurotus commiscibilis Sacc. Syll. Fung. **5**: 353. 1887.

Pileus eccentric, plane or depressed, often subumbilicate, cespitose, 4–6 cm. broad; surface glabrous, pure-white, hygrophanous, margin striate: context thin, tender, white, mild in flavor; lamellae long-decurrent, thin, rather broad, subdistant, white: stipe dilated above, white, solid, glabrous, whitish-tomentose at the base, 1–2 cm. long, 3–6 mm. thick.

TYPE LOCALITY: Cuba.
HABITAT: On logs in woods.
DISTRIBUTION: Cuba and British Honduras.

9. **Crepidopus connatus** (Berk.) Murrill.

Panus connatus Berk. Ann. Mag. Nat. Hist. II. **9**: 194. 1852.

Pileus plane, at length depressed, cespitose-connate, 5 cm. broad; surface glabrous: lamellae decurrent, rather broad, entire, pallid: spores ellipsoid, smooth, hyaline, 4 × 2.5–3 μ: stipe tomentose, 2.5–5 cm. long, 6–12 mm. thick.

TYPE LOCALITY: Santo Domingo.
HABITAT: On dead wood.
DISTRIBUTION: Santo Domingo.

DOUBTFUL SPECIES

Pleurotus connatus (Berk. & Curt.) Sacc. Syll. Fung. **5**: 341. 1887. (*Agaricus (Pleurotus) connatus* Berk. & Curt. Proc. Am. Acad. **4**: 115. 1858.) Described from specimens collected on decayed wood on an island in Bering Strait. The type has not been examined. The name is preoccupied.

Pleurotus glandulosus (Bull.) Quél. Champ. Jura Vosg. 332. 1873. (*Agaricus glandulosus* Bull. Herb. Fr. *pl. 426*. 1788.) Reported from North Carolina by Schweinitz and usually considered a variety of *P. ostreatus*. The specimen figured in Bulliard's plate is almost black in color with a stipe like that of *C. cornucopiae*, so that it is impossible to say definitely just where the species belongs.

Pleurotus Micheneri (Berk. & Curt.) Sacc. Syll. Fung. **5**: 344. 1887. (*Agaricus (Pleurotus) Micheneri* Berk. & Curt. Ann. Mag. Nat. Hist. II. **12**. 420. 1853.) Described from specimens collected on decayed wood in Pennsylvania. The pileus is less than 2 cm. broad and infundibuliform. Both it and the distant, decurrent lamellae are pale-yellow, while the slender stipe is white and 5 cm. long.

Pleurotus mutilus (Fries) Sacc. Syll. Fung. **5**: 350. 1887. (*Agaricus mutilus* Fries, Syst. Myc. **1**: 191. 1821.) Reported from California by Harkness, who may have mistaken an eccentric form of *Clitocybe dealbata* for it.

Pleurotus Pometi (Fries) Quél. Champ. Jura Vosg. 78. 1872. (*Agaricus Pometi* Fries, Epicr. Myc. 132. 1838.) Reported from North Carolina by Curtis and from California by Harkness. It occurs on apple trunks in Europe.

Pleurotus pulvinatus (Pers.) Sacc. Syll. Fung. **5**: 355. 1887. (*Agaricus pulvinatus* Pers. Syn. Fung. 370. 1801.) Reported on pear trunks in New England by Sprague and Curtis. *A. pulvinatus* Bolt. is *Vaginata plumbea*.

Pleurotus putredinis (Berk. & Curt.) Sacc. Syll. Fung. **5**: 354. 1887. (*Agaricus (Pleurotus) putredinis* Berk. & Curt. Jour. Linn. Soc. **10**: 287. 1868.) Described from very small, immature, densely cespitose specimens collected by Wright on dead wood in Cuba. These type specimens are still at Kew, and with them on the same sheet are three very much larger pilei from Cuba bearing no number, which evidently represented the mature form of *A. putredinis* in Berkeley's opinion. The species is represented at Paris by this same large form, which is not distinct from *C. commiscibilis*. If the small typical specimens should be connected definitely with the larger pilei, *A. putredinis* would then become a synonym of *C. commiscibilis*.

Pleurotus salignus (Pers.) Quél. Champ. Jura Vosg. 332. 1873. (*Agaricus salignus* Pers. Syn. Fung. 478. 1801.) Reported from most of the eastern United States, but apparently not specifically distinct from *P. ostreatus*. We have forms occurring here on willow that very closely resemble those referred to this species in Europe. Cooke's plate 228 (282) represents these forms very well.

30. **MICROMPHALE** (Nees) S. F. Gray, Nat. Arr. Brit. Pl. 1: 622. 1821.

Pileus fleshy, putrescent, flabelliform to subcircular in outline: lamellae adnate or sinuate: spores hyaline, sometimes becoming lilac-tinted: stipe more or less eccentric, solid: veil none.

Type species, *Agaricus fimbriatus* Bolt.

Species occurring in temperate North America.
- Lamellae narrow.
  - Odor distinctly farinaceous; stipe 2.5–5 cm. long. — 1. *M. abscondens.*
  - Odor not farinaceous; stipe 5–15 cm. long. — 2. *M. elongatipes.*
- Lamellae broad; pileus 7.5–15 cm. broad. — 3. *M. ulmarium.*

Species occurring in tropical North America.
- Surface conspicuously fibrillose. — 4. *M. fulvifibrillosum.*
- Surface glabrous or pulverulent.
  - Surface white. — 5. *M. subexcavatum.*
  - Surface bay. — 6. *M. badium.*
  - Surface pale-fuscous; lamellae narrow. — 7. *M. brunnescens.*
  - Surface fuscous to blackish; lamellae broad. — 8. *M. fuscifrons.*

1. **Micromphale abscondens** (Peck) Murrill.

Agaricus abscondens Peck, Ann. Rep. N. Y. State Mus. 31: 32. 1879.
Pleurotus abscondens Sacc. Syll. Fung. 5: 346. 1887.

Pileus compact, convex, sometimes slightly depressed at the center, 2.5–7.5 cm. broad; surface dry, glabrous, white: context having a distinct, farinaceous odor; lamellae thin, narrow, crowded, emarginate, white: spores minute, broadly ellipsoid, usually having a shining nucleus, 5 μ long: stipe eccentric, unequal, rather slender, curved, whitish, slightly mealy at the apex, stuffed or hollow, 2.5–7 cm. long, 4–6 mm. thick, sometimes wanting.

TYPE LOCALITY: Griffins, New York.
HABITAT: Decaying deciduous wood, usually in hollow stumps or logs.
DISTRIBUTION: Canada to Ohio and west to Michigan; probably also in Europe.
ILLUSTRATION: Hard, Mushrooms *f. 126.*

2. **Micromphale elongatipes** (Peck) Murrill.

Pleurotus elongatipes Peck, Jour. Myc. 14: 1. 1908.

Pileus fleshy but thin, convex or nearly plane, 5–10 cm. broad; surface glabrous, white, margin even: context white, somewhat bitter; lamellae thin, crowded, rounded behind, sinuate or adnexed, white: spores globose, 4 μ: stipe very long, solid or stuffed, often more or less curved or flexuous, usually eccentric, ventricose, glabrous or slightly pruinose at the apex, more or less tomentose toward the base, 5–15 cm. long, 6–10 mm. thick.

TYPE LOCALITY: Detroit, Michigan.
HABITAT: On elm stumps and decaying wood in woods.
DISTRIBUTION: Michigan and Minnesota.

3. **Micromphale ulmarium** (Bull.) Murrill.

Agaricus ulmarius Bull. Herb. Fr. *pl. 510.* 1790.
Pleurotus ulmarius Quél. Champ. Jura Vosg. 77. 1872.

Pileus fleshy, compact, convex or nearly plane, 7.5–15 cm. broad; surface glabrous, moist, sometimes tinged with reddish, yellowish, or brownish hues and marbled with livid spots, becoming darker and shining when old: context pure-white; lamellae broad, emarginate or rounded behind, adnexed, moderately close, white or whitish: spores globose, smooth, hyaline, becoming slightly salmon-tinted, 5–6 μ: stipe stout, solid, straight or curved, glabrous or partly or wholly tomentose, whitish, 2.5–7.5 cm. long, 12–20 mm. thick.

TYPE LOCALITY: France.
HABITAT: Trunks of deciduous trees, especially elm, often emerging from pruning wounds.
DISTRIBUTION: Canada to Virginia and west to Iowa and Kansas; also in Europe.
ILLUSTRATIONS: Bull. Herb. Fr. *pl. 510;* Ann. Rep. N. Y. State Mus. 48: *pl. 26, f. 1–4;* Atk. Stud. Am. Fungi *f. 102, 103;* Gibson, Edible Toadst. *pl. 15;* Hard, Mushr. Book *f. 119;* Cooke, Brit. Fungi *pl. 227 (271);* Sow. Engl. Fungi *pl. 67, pl. 248, f. 2;* Richon & Roze, Atl. Champ. *pl. 46, f. 1–3.*

4. **Micromphale fulvifibrillosum** Murrill, sp. nov.

Pileus fleshy, convex, dimidiate, solitary, 1–2 cm. broad; surface isabelline, with conspicuous imbricate tufts of tawny fibrils, margin entire, concolorous: lamellae adnate, of medium

breadth and distance, dull-yellowish: spores ovoid, smooth, hyaline, usually 1-guttulate, 7 × 5 μ: stipe short, curved, equal, white, 5 mm. long, 2 mm. thick.

Type collected on fallen dead branches at Orizaba, Mexico, January 10–14, 1910, *W. A. & Edna L. Murrill 836* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

5. **Micromphale subexcavatum** Murrill.

Agaricus (*Pleurotus*) *excavatus* Berk. & Curt. Jour. Linn. Soc. **10**: 287. 1868. Not *A. excavatus* Leysser. 1783.
Pleurotus excavatus Sacc. Syll. Fung. 5: 353. 1887.

Pileus eccentric, depressed, 18 mm. broad; surface at first subzonate, pulverulent: lamellae adnate-decurrent, much crowded, narrow: spores hyaline: stipe larger above and below, mycelioid at the base, 12 mm. long, 2 mm. thick.

TYPE LOCALITY: Cuba.
HABITAT: On rotten wood.
DISTRIBUTION: Known only from the type locality.

6. **Micromphale badium** Murrill, sp. nov.

Pileus thick, fleshy, subhemispheric, 2 cm. broad and 1 cm. thick; surface smooth, glabrous, bay; margin undulate, incurved, grayish-pruinose: lamellae adnate, broad, not crowded, dull-watery-white with a grayish tint: spores pip-shaped, smooth, hyaline, about 4 μ long: stipe very eccentric, short, thick, abruptly contracted at the apex, smooth, glabrous, grayish-isabelline, 6 mm. long, 5 mm. thick.

Type collected on dead wood at Morce's Gap, Jamaica, December 29, 30, January 2, 1908–9, *W. A. & Edna L. Murrill 733* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

7. **Micromphale brunnescens** Earle, Inf. An. Estaç. Centr. Agron. Cuba **1**: 235. 1906.

Pileus thin, dimidiate, broadly spatulate, expanded, solitary, 3–4 cm. broad; surface glabrous but slightly silky-whitened at the base, pale-fuscous, margin not striate: lamellae adnate, scarcely decurrent, densely crowded, narrow, erose, often splitting, subconcolorous but paler: spores globose, 3–4 μ: stipe lateral or nearly so, cylindric, silky-whitened, solid, about 1 cm. long and 3 mm. thick.

TYPE LOCALITY: Guanajay, Cuba.
HABITAT: On dead wood among moss.
DISTRIBUTION: Known only from the type locality.
ILLUSTRATION: Inf. An. Estaç. Centr. Agron. Cuba **1**: *pl. 32, f. 2.*

8. **Micromphale fuscifrons** (Berk. & Curt.) Murrill.

Agaricus (*Pleurotus*) *fuscifrons* Berk. & Curt. Jour. Linn. Soc. **10**: 287. 1868.
Pleurotus fuscifrons Saac. Syll. Fung. **5**: 353. 1887.

Pileus thin, soft, plane, subcespitose or solitary, 1.5–2.5 cm. broad; surface glabrous, fuscous to blackish: lamellae adnate-decurrent, broad, subfuscous: stipe lateral or sublateral, 6–8 mm. long.

TYPE LOCALITY: Cuba.
HABITAT: On dead wood.
DISTRIBUTION: Cuba.

DOUBTFUL SPECIES

Lentinus pallidus Berk. & Curt. Ann. Mag. Nat. Hist. II. **12**: 427. 1853. Described from South Carolina, and represented at Kew by one poor specimen, which resembles both *Lentodium tigrinum* and *Micromphale abscondens*, or may be *Pleurotus corticatus* with the ring gone.

Pleurotus circinatus (Fries) Quél. Ench. Fung. 147. 1886. (*Agaricus circinatus* Fries, Epicr. Myc. 132. 1838.) Reported from California by Harkness.

Pleurotus craspedius (Fries) Sacc. Syll. Fung. **5**: 343. 1887. (*Agaricus craspedius* Fries, Epicr. Myc. 131. 1838.) Reported from Ohio by Morgan and from Minnesota by Johnson. It occurs in Europe on pine trunks.

Pleurotus pubescens Peck, Ann. Rep. N. Y. State Mus. **44**: 130. 1892. Described from specimens collected on trunks of trees at Lyndonville, New York, by Fairman. The single type specimen is preserved at Albany and proves to be a peculiar, tomentose form of *Lentinula reticeps* (Mont.) Murrill, in which the reticulations are confined to the margin of the pileus. The specimen is somewhat molded, but this does not appear to account for the tomentum.

Pleurotus sulfureoides (Peck) Sacc. Syll. Fung. **5**: 345. 1887. (*Agaricus sulfureoides* Peck, Ann. Rep. N. Y. State Cab. **23**: 86. 1872.) Described from specimens collected on an old log in woods in the Catskill Mountains, New York. This probably belongs in *Cortinellus*.

Pleurotus tessellatus (Bull.) Quél. Ench. Fung. 147. 1886. (*Agaricus tessellatus* Bull. Herb. Fr. *pl. 513, f. 1.* 1791.) Reported from North Carolina by Schweinitz.

Pleurotus terrestris Peck, Bull. N. Y. State Mus. 116: 29. 1907. Type collected on the ground in the margin of woods at West Fort Ann, New York, by Burnham. The lamellae are described as emarginate and the stipe as eccentric. The type specimens cannot be located at Albany under *Pleurotus*, and the species probably belongs elsewhere.

Pleurotus umbonatus Peck, Bull. Torrey Club **32**: 77. 1905. Described from specimens collected on the ground at Kittanning, Pennsylvania. This species appears to belong rather in *Cortinellus* than in *Micromphale*. There are good specimens at Albany.

31. **LEPTOMYCES** Mont. Syll. Crypt. 128. 1856.

Agaricus § *Hiatula* Fries, Nova Acta Soc. Sci. Upsal. III. **1**: 27. 1851.
Hiatula Sacc. Syll. Fung. **5**: 305. 1887.
Leucoprinus Pat. Bull. Soc. Myc. Fr. **4**: 26. 1888.

Pileus membranous, plicate-sulcate, splitting down the backs of the lamellae, margin appressed to the stipe when young: lamellae free or attached: spores hyaline: stipe central, slender, tubular, with cartilaginous cortex: veil none.

Type species, *Leptomyces lignifragus* Mont.

Stipe conic, 15 mm. at the base and 4 mm. at the apex. — 1. *L. discretus.*
Stipe equal.
  Pileus less than 1 cm. broad. — 2. *L. minimus.*
  Pileus 2 cm. or more broad.
    Lamellae attached. — 3. *L. ciliatulus.*
    Lamellae free.
      Pileus plane, pale-purple. — 4. *L. purpurascens.*
      Pileus bell-shaped, reddish-brown. — 5. *L. Benzonii.*

1. **Leptomyces discretus** (Fries) Murrill.

Agaricus discretus Fries, Elench. Fung. **1**: 20. 1828.

Pileus thin, conic, umbonate, solitary; surface white, margin densely striate: lamellae free with a remote collar, crowded, white: stipe conic-ventricose, glabrous, white, hollow, 4–5 cm. long, 1.5 cm. thick at the base, 4 mm. thick at the apex.

TYPE LOCALITY: Santa Cruz Island.
DISTRIBUTION: Known only from the type locality.

2. **Leptomyces minimus** (Berk.) Murrill.

Hiatula minima Berk. Ann. Mag. Nat. Hist. II. **9**: 193. 1852.

Pileus umbilicate, 8 mm. broad; surface light-gray, striate, margin crenate: lamellae forking, remote, plane: stipe slender, paler than the pileus.

TYPE LOCALITY: Santo Domingo.
DISTRIBUTION: Known only from the type locality.

3. **Leptomyces ciliatulus** (Fries) Murrill.

Agaricus (*Hiatula*) *ciliatulus* Fries, Nova Acta Soc. Sci. Upsal. III. **1**: 27. 1851.

Pileus very thin, membranous, campanulate-convex, obtuse, 2.5 cm. broad; surface pellucid, cinereous, margin radiate-plicate, ciliatulate, at first incurved: lamellae distant, white, adnexed, the alternate ones shorter and the long ones flexuous: stipe equal, glabrous, hollow, white, fuscous at the base, 2.5 cm. long, 2 mm. thick.

TYPE LOCALITY: Costa Rica.
HABITAT: On rotten wood.
DISTRIBUTION: Known only from the type locality.

4. **Leptomyces purpurascens** (Berk. & Curt.) Murrill.

Hiatula purpurascens Berk. & Curt. Jour. Linn. Soc. **10**: 293. 1868.

Pileus thin, plane, 2.5 cm. broad; surface pale-purple, glabrous: lamellae free, broad: stipe somewhat enlarged at the apex, glabrous, solid, 4 cm. long.

TYPE LOCALITY: Cuba.
HABITAT: On rotten leaves.
DISTRIBUTION: Known only from the type locality.

5. **Leptomyces Benzonii** (Fries) Murrill.

Agaricus Benzonii Fries, Elench. Fung. **1**: 20. 1828.

Pileus thin, campanulate to expanded, umbilicate, 2.5 cm. broad; surface pale-reddish or brownish, margin striate: lamellae free, approximate, white: spores ovoid, apiculate, 1-guttulate, hyaline, 8–11 × 7 μ: stipe equal, glabrous, 2.5–4 cm. long, 2–4 mm. thick.

TYPE LOCALITY: Santa Cruz Island.
HABITAT: On logs.
DISTRIBUTION: Known only from the type locality.

DOUBTFUL AND EXCLUDED SPECIES

Hiatula caespitosa Berk. & Curt. Jour. Linn. Soc. **10**: 293. 1868. Described from specimens collected on logs in Cuba. See *Omphalopsis euspeirea*.

Hiatula crenulata (Fries) Sacc. Syll. Fung. **5**: 305. 1887. (*Agaricus* (*Hiatula*) *crenulatus* Fries, Nova Acta Soc. Sci. Upsal. III. **1**: 27. 1851.) See doubtful species of *Heliomyces*.

Hiatula fragillissima Berk. & Rav. Ann. Mag. Nat. Hist. II. **12**: 422. 1853. This species has been referred to *Lepiota cretacea*.

32. **OMPHALOPSIS** Earle, Bull. N. Y. Bot. Gard. **5**: 425. 1909.

Agaricus § *Omphalia* Fries, Syst. Myc. **1**: 162. 1821.
Omphalia Quél. Ench. Fung. 19. 1886. Not *Omphalius* Roussel, 1806.

Pileus usually umbilicate with the margin at first appressed, usually solitary or gregarious: lamellae decurrent, thin, acute: spores hyaline: stipe central, slender, tubular, with cartilaginous cortex.

Type species, *Agaricus campanella* Batsch.

I. SPECIES OCCURRING IN TEMPERATE NORTH AMERICA, EXCEPT THOSE CONFINED TO THE PACIFIC COAST

Pileus white or whitish.
  Pileus not exceeding 6 mm. broad; surface pure-white.
    Pileus papillate, conic or campanulate. — 1. *O. papillata.*
    Pileus umbilicate.
      Pileus 2–4 mm. broad. — 2. *O. pusillissima.*
      Pileus 4–6 mm. broad. — 3. *O. Rhododendri.*
  Pileus exceeding 6 mm. broad, rarely smaller in some specimens of *O. corticola*, *O. clavata*, and *O. immaculata*.
    Pileus umbilicate or depressed at the center.
      Surface striate, at least on the margin.
        Stipe 1–2.5 cm. long.
          Stipe whitish throughout. — 4. *O. albidula.*
          Stipe partly brownish. — 5. *O. corticola.*
        Stipe 2.5–4 cm. long. — 6. *O. Austini.*
      Surface not striate; hymenophore pure-white throughout. — 7. *O. translucentipes.*
    Pileus convex, not depressed at the center.
      Pileus densely cespitose. — 8. *O. centenaria.*
      Pileus not densely cespitose.
        Pileus pure-white. — 9. *O. immaculata.*
        Pileus pallid or cinereous.
          Pileus convex to subplane, not umbonate. — 10. *O. clavata.*
          Pileus convex to turbinate, usually umbonate. — 11. *O. turbinata.*
Pileus yellow, orange, or ferruginous.
  Pileus yellowish-ferruginous; stipe 2.5 cm. or less long. — 12. *O. campanella.*
  Pileus orange or pale-yellow; stipe 2.5–5 cm. long.
    Pileus 12 mm. or more broad; spores 7.5 × 5 μ. — 13. *O. fibuloides.*
    Pileus 3–10 mm. broad, rarely larger; spores 4–6 × 2–3 μ. — 14. *O. fibula.*
Pileus olive-green. — 15. *O. olivaria.*
Pileus grayish-brown or fuliginous.

Pileus grayish-brown, rarely paler.
  Stipe 1.5–2.5 cm. long. 16. *O. serotina.*
  Stipe 4 cm. long. 17. *O. praedecurrens.*
Pileus fuliginous, paler when dry; stipe 3–4 cm. long. 18. *O. pseudogrisea.*

II. SPECIES OCCURRING ON THE PACIFIC COAST

Pileus pure-white.
  Pileus 2.5 mm. broad. 19. *O. californiensis.*
  Pileus 5–10 mm. broad.
    Stipe glabrous. 20. *O. McMurphyi.*
    Stipe whitish-pruinose. 21. *O. subimmaculata.*
Pileus pale-orange or yellowish-ferruginous.
  Pileus pale-orange; stipe glabrous. 22. *O. aurantiaca.*
  Pileus yellowish-ferruginous; stipe conspicuously tawny-strigose below. 12. *O. campanella.*
Pileus brownish-gray at the center, with paler shades toward the margin. 23. *O. Bakeri.*

III. SPECIES OCCURRING IN TROPICAL NORTH AMERICA

Pileus entirely smoky-white; lamellae very distant. 24. *O. distantifolia.*
Pileus white or whitish, differently colored on the disk.
  Disk reddish-brown; stipe scarcely 1 mm. thick. 25. *O. convexa.*
  Disk some other color; stipe 2–3 mm. thick.
    Disk pale-yellowish; hymenophore solitary. 26. *O. petasiformis.*
    Disk subfuscous; hymenophore densely cespitose. 27. *O. euspeirea.*
Pileus some shade of yellow or orange.
  Hymenophore solitary or gregarious.
    Pileus lemon-yellow, 5 mm. broad; occurring among dead leaves. 28. *O. citricolor.*
    Pileus orange-yellow, often fading, 2–13 mm. broad; occurring among mosses. 14. *O. fibula.*
    Pileus stramineous with a grayish tint, 12 mm. broad. 29. *O. myceniformis.*
    Pileus dull-rosy-isabelline, 2 cm. broad. 30. *O. cuticolor.*
  Hymenophore cespitose.
    Pileus pale-isabelline; stipe glabrous. 31. *O. roriduliformis.*
    Pileus yellowish-ferruginous to dull-reddish-yellow; stipe adorned below with brown hairs. 12. *O. campanella.*
Pileus pale-avellaneous, 8 mm. broad, gregarious. 32. *O. subavellanea.*

1. **Omphalopsis papillata** (Peck) Murrill.

Omphalia papillata Peck, Ann. Rep. N. Y. State Mus. **51**: 285. 1898.

Pileus membranous, conic or campanulate, 2–6 mm. broad; surface papillate, pure-white, margin nearly even: lamellae strongly decurrent, few, distant, arcuate, white: spores subglobose, 4–5 μ: stipe glabrous, attached to the matrix by a few radiating white filaments, filiform, white, about 2.5 cm. long.

TYPE LOCALITY: Gansevoort, New York.
HABITAT: On sticks and fallen leaves in woods.
DISTRIBUTION: Known only from the type locality.

2. **Omphalopsis pusillissima** (Peck) Murrill.

Omphalia pusillissima Peck, Bull. N. Y. State Mus. 116: 27. 1907.

Pileus membranous, broadly convex or nearly plane, umbilicate, 2–4 mm. broad; surface glabrous, white, slightly striate on the margin when dry: lamellae few, distant, decurrent, white: spores subglobose or broadly ellipsoid, 5–6 × 4–5 μ: stipe slender, filiform, flexuous, glabrous, white, 6–10 mm. long.

TYPE LOCALITY: Delmar, Albany County, New York.
HABITAT: On humus and decaying twigs under pine trees.
DISTRIBUTION: New York.

3. **Omphalopsis Rhododendri** (Peck) Murrill.

Agaricus (Omphalia) Rhododendri Peck, Ann. Rep. N. Y. State Mus. **27**: 94. 1875.
Omphalia Rhododendri Sacc. Syll. Fung. **5**: 335. 1887.

Pileus convex, umbilicate, 4–6 mm. broad; surface glabrous, slightly viscid when moist, white, margin striate: lamellae subdistant, arcuate, decurrent, white, beaded on the edges with gland-like protuberances: spores oblong or narrowly ellipsoid, 7.5 × 3 μ: stipe white, roughened with minute, white, gland-like protuberances, slender, 12–16 mm. long.

TYPE LOCALITY: Forestburgh, New York.
HABITAT: On dead trunks of *Rhododendron maximum.*
DISTRIBUTION: Northern New York.

4. **Omphalopsis albidula** (Peck) Murrill.

Omphalia albidula Peck, Ann. Rep. N. Y. State Mus. **49**: 17. 1896.

Pileus thin, convex, umbilicate, 8 mm. broad; surface glabrous, whitish, margin distantly striate: lamellae decurrent, distant, broad, white: spores subellipsoid, apiculate at one end, 7.5–10 × 5–6 μ: stipe glabrous or mealy at the apex and strigose at the base, white or whitish, slender, solid, 1.5–2.5 cm. long, 1 mm. thick.

TYPE LOCALITY: Mechanicville, New York.
HABITAT: On bark of deciduous trees.
DISTRIBUTION: Known only from the type locality.

5. **Omphalopsis corticola** (Peck) Murrill.

Omphalia corticola Peck, Ann. Rep. N. Y. State Mus. **44**: 130 (18). 1891.

Pileus submembranous, convex, becoming expanded and umbilicate, 4–8 mm. broad; surface whitish or pale-cinereous, distantly radiate-striate: lamellae narrow, distant, at first arcuate and adnate, becoming truly decurrent, white: spores ellipsoid, generally containing a single large nucleus, 7.5 × 4 μ: stipe subpruinose or sprinkled with mealy particles, at first whitish with a brown base, becoming brown with a whitish apex, short, curved, 8–16 mm. long.

TYPE LOCALITY: Carollton, New York,
HABITAT: On bark of white oak trees.
DISTRIBUTION: Known only from the type locality.
ILLUSTRATIONS: Ann. Rep. N. Y. State Mus. **44**: *pl. 2, f. 8–12.*

6. **Omphalopsis Austini** (Peck) Murrill.

Agaricus (Omphalia) Austini Peck, Ann. Rep. N. Y. State Mus. **28**: 48. 1876.
Omphalia Austini Sacc. Syll. Fung. **5**: 336. 1887.

Pileus rather tenacious, convex or hemispheric, deeply umbilicate, sometimes perforate, 6–12 mm. broad; surface glabrous, viscid when moist, white, margin striate: lamellae subarcuate, distant, decurrent, white: spores ellipsoid, 7.5 × 5 μ: stipe glabrous, even, white, villose at the base, equal, hollow, 2.5–4 cm. long, 1 mm. thick.

TYPE LOCALITY: Providence, Saratoga County, New York.
HABITAT: On decaying wood of spruce and arbor-vitae.
DISTRIBUTION: New York.

7. **Omphalopsis translucentipes** Murrill, sp. nov.

Pileus very thin and delicate, convex, depressed at the center, gregarious to subcespitose, scarcely reaching 1 cm. broad; surface glabrous, not striate, pure-white, margin entire, concolorous: lamellae simple, short-decurrent, subdistant, rather narrow, white: stipe very slender, cylindric, smooth, glabrous, white, subtranslucent, 2 cm. long, less than 1 mm. thick.

Type collected on an old stump in wet woods in City Park, New Orleans, Louisiana, September 6, 1908, *F. S. Earle 72* (herb. N. Y. Bot. Gard.).
HABITAT: Logs or stumps in wet woods.
DISTRIBUTION: Vicinity of New Orleans, Louisiana.

8. **Omphalopsis centenaria** (Berk. & Curt.) Murrill.

Agaricus (Omphalia) centenarius Berk. & Curt. Ann. Mag. Nat. Hist. II. **12**: 420. 1853.
Omphalia centenaria Sacc. Syll. Fung. **5**: 334. 1887.

Pileus fragile, thin, conic-convex, umbonate, densely cespitose, 12 mm. broad; margin sulcate: lamellae long-decurrent, white: stipe spotted-annulate, whitish-hyaline, darker at the base, hollow, tomentose-connate below, 8–10 cm. long.

TYPE LOCALITY: South Carolina.
HABITAT: On rotten logs.
DISTRIBUTION: Known only from the type locality.

9. **Omphalopsis immaculata** (Peck) Murrill.

Agaricus (Mycena) immaculatus Peck, Ann. Rep. N. Y. State Mus. **38**: 41. 1885.
Mycena immaculata Sacc. Syll. Fung. **5**: 264. 1887.

Pileus membranous, conic or subhemispheric, 5–10 mm. broad; surface glabrous, pure-

white, margin striatulate: lamellae uncinate-decurrent, distant, broad, white: spores oblong, 7–8.5 × 3 μ: stipe slender, entirely glabrous or villose at the base, pellucid, white, slightly enlarged at the apex.

TYPE LOCALITY: Adirondack Mountains, New York.
HABITAT: Among moss and fallen leaves and on naked ground.
DISTRIBUTION: New York.

10. **Omphalopsis clavata** (Peck) Murrill.

Omphalia clavata Peck, Ann. Rep. N. Y. State Mus. **51**: 285. 1898.

Pileus thin, convex to subplane, 4–8 mm. broad; surface glabrous, pallid or subcinereous, margin decurved: lamellae very decurrent, distant, narrow, pallid: spores globose, 5–6 μ: stipe long, slender, glabrous, slightly villose at the base, enlarged above, pallid, stuffed, 2.5 cm. long, 1 mm. or less thick.

TYPE LOCALITY: Raybrook, Essex County, New York.
HABITAT: On dead prostrate trunks of arbor-vitae, *Thuja occidentalis*.
DISTRIBUTION: Known only from the type locality.

11. **Omphalopsis turbinata** Murrill, sp. nov.

Pileus convex to turbinate, usually umbonate, gregarious, 8–14 mm. broad; surface glabrous, hygrophanous, pale-grayish, becoming lighter when dry, margin thin, pallid, even or faintly subplicate, appressed when young: lamellae long-decurrent, subdistant, rather broad, concolorous: spores ellipsoid, pointed at one end, smooth, hyaline, 7–8 × 4 μ: stipe subcylindric, smooth, slightly pruinose, concolorous above, darker below, firm, nearly solid, 3 cm. long, 1–1.5 mm. thick.

Type collected on the ground among mosses in the New York Botanical Garden, July 10, 1902, *F. S. Earle 207* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: New York City.

12. **Omphalopsis campanella** (Batsch) Earle, Bull. N. Y. Bot. Gard. **5**: 425. 1909.

Agaricus fragilis Schaeff. Fung. Bavar. **4**: Ind. 56. 1774. Not *Agaricus fragilis* L. 1764.
Agaricus campanella Batsch, Elench. Fung. 73. 1783.
Agaricus (*Omphalia*) *Tagetes* Mont. Ann. Sci. Nat. IV. **14**: 182. 1860.
Omphalia campanella Quél. Champ. Jura Vosg. 219. 1872.
Omphalia pubescentipes Peck, Bull. Torrey Club **24**: 141. 1897.

Pileus thin, rather tough, hemispheric or convex, umbilicate, gregarious to subcespitose, 8–20 mm. broad; surface glabrous, hygrophanous, yellowish-ferruginous and striatulate when moist, paler when dry: lamellae moderately close, arcuate, decurrent, yellowish, the interspaces venose: spores ellipsoid, 6–7 × 3–4 μ: stipe firm, rigid, hollow, brown, often paler at the apex, tawny-strigose at the base, about 2.5 cm. long, scarcely 2 mm. thick.

TYPE LOCALITY: Europe.
HABITAT: On much decayed wood of coniferous trees.
DISTRIBUTION: Throughout temperate North America and at high elevations in Cuba, Jamaica, and Mexico; also in Europe.
ILLUSTRATIONS: Cooke, Brit. Fungi *pl. 273 (263) A;* Hard, Mushrooms *f. 97;* Mycologia **4**: *pl. 68, f. 10;* Schaeff. Fung. Bavar. *pl. 230.*

13. **Omphalopsis fibuloides** (Peck) Murrill.

Agaricus (*Omphalia*) *fibuloides* Peck, Ann. Rep. N. Y. State Mus. **24**: 63. 1872.
Omphalia fibuloides Sacc. Syll. Fung. **5**: 331. 1887.

Pileus thin, convex, deeply umbilicate, 12–20 mm. broad; surface glabrous, hygrophanous, dull-orange and striatulate when moist, paler when dry: lamellae rather crowded, arcuate, strongly decurrent, white, the interspaces venose: spores ellipsoid, 7.5 × 5 μ: stipe equal, glabrous, colored nearly like the pileus, hollow, 2.5–5 cm. long, scarcely 2 mm. thick.

TYPE LOCALITY: Greig, New York.
HABITAT: On burnt, mossy ground in a pasture.
DISTRIBUTION: Known only from the type locality.

14. **Omphalopsis fibula** (Bull.) Murrill.

Agaricus fibula Bull. Herb. Fr. *pl. 186.* 1783.
Omphalia Swartzii Peck, Ann. Rep. N. Y. State Mus. **45**: 40. 1893.

Pileus membranous, commonly convex or hemispheric and umbilicate, rarely conic, 3–20 mm. broad; surface glabrous, hygrophanous, striatulate when moist and varying in color from orange to pale-yellow, sometimes with darker center, even and paler when dry: lamellae distant, arcuate, strongly decurrent, white or yellowish: spores ellipsoid, smooth, 4–6 × 2–3 μ; cystidia 35–40 × 7–8 μ: stipe long, slender, subconcolorous, glabrous, 2.5–5 cm. long, 0.5–2 mm. thick.

TYPE LOCALITY: France.
HABITAT: On mossy ground and prostrate mossy trunks of trees in woods or open places.
DISTRIBUTION: Canada to the West Indies and Honduras and west to Colorado; also in Europe.
ILLUSTRATIONS: Bull. Herb. Fr. *pl. 186, pl. 550, f. 1;* Cooke, Brit. Fungi *pl. 274 (265) B;* Hard, Mushrooms *f. 99;* Sow. Engl. Fungi *pl. 45.*

15. **Omphalopsis olivaria** (Peck) Murrill.

Agaricus (Omphalia) olivarius Peck, Bull. Buffalo Soc. Nat. Sci. **1**: 48. 1873.
Omphalia olivaria Sacc. Syll. Fung. **5**: 335. 1887.

Pileus convex, umbilicate, 2.5 cm. broad; surface glabrous, olive-green: lamellae subdistant, arcuate-decurrent, pale-yellow: spores subglobose or broadly ellipsoid, 6–7 × 5 μ: stipe equal, short, glabrous, colored like the pileus, hollow, 2.5 cm. long, 2 mm. thick.

TYPE LOCALITY: North Elba, New York.
HABITAT: On burnt ground under balsam fir trees.
DISTRIBUTION: Known only from the type locality.

16. **Omphalopsis serotina** (Peck) Murrill.

Omphalia serotina Peck, Bull. Torrey Club **34**: 98. 1907.

Pileus submembranous, convex, sometimes slightly depressed at the center or subumbilicate, 1–2 cm. broad; surface grayish-brown, grayish-white, or subcinereous, margin widely striate when fresh and moist, slightly striate when dry: lamellae rather broad, subdistant, adnate or slightly decurrent, white: spores narrowly ellipsoid, 8–10 × 4–5 μ: stipe slender, hollow, glabrous, slightly villose-tomentose at the base, pallid, 1.5–2.5 cm. long, 1 mm. thick.

TYPE LOCALITY: Boston, Massachusetts.
HABITAT: Among fallen leaves in woods.
DISTRIBUTION: Known only from the type locality.

17. **Omphalopsis praedecurrens** Murrill.

Mycena praedecurrens Murrill, Mycologia **4**: 165. 1912.

Pileus conic to subturbinate when young, then umbonate, and at length nearly plane, densely gregarious to subcespitose, reaching 1.5 cm. broad and nearly 1 cm. high; surface glabrous, very slightly viscid when wet, avellaneous, with darker avellaneous umbo; margin straight, appressed, usually striate, often yellowish-white: lamellae long decurrent, distant, nearly plane, inserted, entire, white with an ashy tint, acute at each end: spores ovoid, smooth, hyaline, 5×3–3.5 μ: stipe enlarged at the apex, subglabrous, gelatinous-white, avellaneous at the base, slightly viscid when wet, stuffed, about 4 cm. long and 2 mm. thick.

TYPE LOCALITY: The Bronx, New York City.
HABITAT: On a mossy bank filled with slender roots in moist, deciduous woods.
DISTRIBUTION: Known only from the type locality.

18. **Omphalopsis pseudogrisea** Murrill, sp. nov.

Pileus convex-depressed, gregarious, 1–2 cm. broad; surface glabrous, smooth, subhygrophanous, fuliginous, paler when dry, margin concolorous, faintly striate, appressed when young: lamellae inserted, not forking, decurrent, distant, broad, arcuate to plane, pallid: spores ovoid, pointed at one end, smooth, hyaline, uniguttulate, 6–8 × 4 μ: stipe cylindric, smooth, glabrous, subconcolorous, apparently solid, 3–4 cm. long, 1–2 mm. thick.

Type collected on a rotten stump at Englewood, New Jersey, August 22, 1903, *F. S. Earle 1911* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: New Jersey and southern New York.

19. **Omphalopsis californiensis** Murrill, sp. nov.

Pileus very delicate, pure-white throughout, conic to narrowly campanulate, distinctly umbonate, gregarious, 2.5 mm. broad and high; surface smooth, glabrous, margin entire, appressed when young: context white, without characteristic taste or odor; lamellae decurrent, broad, arcuate, distant: spores ovoid, smooth, hyaline, 7–9 × 5 μ: stipe very slender, cylindric, pulverulent above, glabrous below, cartilaginous, becoming hollow, 1–2 cm. long, less than 1 mm. thick.

Type collected among decaying pine needles in shady pine woods at Stanford University, California, November 16, 1901, *C. F. Baker 92* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

20. **Omphalopsis McMurphyi** Murrill, sp. nov.

Pileus rather small and delicate, convex, cespitose, 5–10 mm. broad; surface smooth, glabrous, white, margin undulate, furrowed, appressed when young: context thin, white, without characteristic taste or odor; lamellae decurrent, subdistant, about 20 in number, rather broad, white: stipe cylindric, slender, hollow, white, glabrous, mycelioid at the base, 1.5–3 cm. long, 0.5–1 mm. thick.

Type collected in soil, probably attached to buried wood, on the bank of Madera Creek, near Stanford University, California, December 21, 1902, *James McMurphy 51* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

21. **Omphalopsis subimmaculata** Murrill, sp. nov.

Pileus small, convex, slightly depressed at the center, cespitose, reaching 8 mm. broad; surface smooth, glabrous, finely striate nearly to the center, pure-snow-white, margin entire, appressed when young: lamellae long-decurrent, distant, rather narrow, inserted, white: stipe very slender, cylindric, hollow, white, minutely whitish-pruinose to subglabrous, 2 cm. long, 0.5 mm. thick.

Type collected on dead wood in woods near Seattle, Washington, October 20–November 1, 1911, *W. A. Murrill 688* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

22. **Omphalopsis aurantiaca** (Peck) Murrill.

Omphalia aurantiaca Peck, Bull. Torrey Club **25**: 323. 1898.

Pileus very thin, broadly convex or subplane, cespitose, 1–2.5 cm. broad; surface glabrous, pale-orange, margin striatulate when moist, inflexed: lamellae thick, pale-orange, decurrent, distant: spores ellipsoid, 7.5 × 4 μ: stipe short, often curved, concolorous, 1–2.5 cm. long, 1 mm. thick.

TYPE LOCALITY: Portland, Oregon.

HABITAT: On old fir tree logs in woods.

DISTRIBUTION: Known only from the type locality.

23. **Omphalopsis Bakeri** Murrill, sp. nov.

Pileus minute, delicate, broadly campanulate, gregarious, 3–8 mm. broad; surface brownish-gray on the disk, becoming lighter toward the margin, dry, glabrous, margin undulate, pallid, striate, appressed when young: context very thin, white, without characteristic odor or taste; lamellae decurrent, inserted, subdistant, rather broad, white: stipe very slender, cylindric, pale-brownish-gray, smooth, glabrous, except at the base, hollow, 2–3 cm. long, less than 1 mm. thick.

Type collected among decaying pine needles in a shady grove at Stanford University, California, November 16, 1901, *C. F. Baker 93* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

24. **Omphalopsis distantifolia** Murrill, sp. nov.

Pileus infundibuliform, gregarious, reaching 3 cm. broad; surface smoky-white, silky-fibrillose to glabrous, broadly striate-sulcate: lamellae decurrent, very distant, broad, white:

spores globose or broadly ellipsoid, 5–7 μ long: stipe subcylindric, pruinose, white, solid, 2 cm. long, 3–4 mm. thick.

Type collected on dead bamboo at Moore Town, Jamaica, November 22, 1902, *F. S. Earle 546* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

25. **Omphalopsis convexa** Murrill, sp. nov.

Pileus convex, not depressed at the center, cespitose, 1 cm. broad; surface glabrous, striate, dull-brownish-white, reddish-brown on the disk, margin entire, appressed when young: lamellae decurrent, arcuate, broad, subdistant, white: spores narrowly ovoid, pointed at one end, smooth, hyaline, 5 × 2 μ: stipe slender, equal, curved, smooth, glabrous, dull-reddish-brown, 1 cm. long, scarcely 1 mm. thick.

Type collected on a mossy log in Castleton Gardens, Jamaica, 200 m. elevation, December 14, 15, 1908, *W. A. & Edna L. Murrill 59* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

26. **Omphalopsis petasiformis** Murrill, sp. nov.

Pileus hat-shaped, with a large and prominent umbo, solitary, 2 cm. broad, 1 cm. high; surface pure-white, glabrous, faintly striate, the umbo faintly straw-colored: lamellae decurrent, distant, broad, thin, ventricose, pure-white: stipe cylindric, equal, smooth, glabrous, pure-white, 3 cm. long, 2–3 mm. thick.

Type collected on the ground under tree ferns at Morce's Gap, Jamaica, 1500 m. elevation, December 29, 30, January 2, 1908–9, *W. A. & Edna L. Murrill 706* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Jamaica, at elevations of about 1500 m.

27. **Omphalopsis euspeirea** (Berk. & Curt.) Murrill.

Agaricus (*Mycena*) *euspeireus* Berk. & Curt. Jour. Linn. Soc. **10**: 285. 1868.
Agaricus (*Omphalia*) *subpellucidus* Berk. & Curt. Jour. Linn. Soc. **10**: 286. 1868.
Agaricus (*Omphalia*) *anthiceps* Berk. & Curt. Jour. Linn. Soc. **10**: 286. 1868.
Hiatula caespitosa Berk. & Curt. Jour. Linn. Soc. **10**: 293. 1868.
Omphalia paraguariensis Speg. Anal. Soc. Ci. Argent. **16**: 245. 1883.

Pileus thin, convex, more or less umbilicate, densely cespitose, 1–2.5 cm. broad; surface glabrous, white, subfuscous at the center, margin striate-sulcate, depressed, often elevated with age: lamellae adnate-decurrent, distant, broad, white: spores ellipsoid, smooth, hyaline, 5 × 3 μ: stipe slender, glabrous, white, pellucid, hollow, dilated at the apex, strigose at the base, 2.5–3 cm. long.

TYPE LOCALITY: Cuba.
HABITAT: On decayed logs in woods.
DISTRIBUTION: Cuba, Porto Rico, and Jamaica; also in Paraguay.

28. **Omphalopsis citricolor** (Berk. & Curt.) Murrill.

Agaricus (*Mycena*) *citricolor* Berk. & Curt. Jour. Linn. Soc. **10**: 285. 1868.
Mycena citricolor Sacc. Syll. Fung. **5**: 263. 1887.

Pileus small, thin, pellucid, convex, gregarious, 5 mm. broad; surface lemon-yellow: lamellae decurrent, few, concolorous: stipe glabrous, filiform, concolorous, 6 mm. long.

TYPE LOCALITY: Cuba.
HABITAT: On dead leaves.
DISTRIBUTION: Cuba and Jamaica.

29. **Omphalopsis myceniformis** Murrill, sp. nov.

Pileus thin, convex, not expanding, solitary, 12 mm. broad; surface glabrous, dry, stramineous with a grayish tint, margin striate, satiny, deflexed, entire: lamellae short-decurrent, inserted, ventricose, broad, subdistant, white: spores globose, smooth, hyaline, 5–7 μ: stipe long, tough, curved, smooth, glabrous, pale-reddish-brown, 3 cm. long, 1 mm. thick.

Type collected in humus in a moist virgin forest in the Tepeite Valley, near Cuernavaca, Mexico, 2100 m. elevation, December 28, 1909, *W. A. & Edna L. Murrill 463* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

30. **Omphalopsis cuticolor** Murrill, sp. nov.

Pileus convex to plane, slightly depressed at the center, solitary, 2 cm. broad; surface striate, dull-rosy-isabelline, hygrophanous at the center: lamellae decurrent, broad, distant, interveined, whitish: spores ovoid, much pointed at one end, smooth, hyaline, 5–7 × 3–4 μ: stipe cylindric, equal, slightly enlarged above, smooth, glabrous, concolorous, about 3 cm. long and 1 mm. thick.

Type collected on buried dead wood in a moist virgin forest at Motzorongo near Cordoba, Mexico, 1500 m. elevation, January 15, 1910, *W. A. & Edna L. Murrill 1014* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

31. **Omphalopsis roriduliformis** Murrill, sp. nov.

Pileus thin, fleshy, hemispheric, cespitose, abundant, 1 cm. broad; surface dry, glabrous, finely roughened, pale-isabelline, margin entire, concolorous, appressed when young: lamellae decurrent, broad, subdistant, ventricose, watery-whitish: spores subglobose, smooth, hyaline, minute, apparently immature, 2 μ: stipe cylindric, smooth, glabrous, pale-melleous, 1.5–2.5 cm. long, 1 mm. or less thick.

Type collected on the under side of a dead log in Troy and Tyre, Cockpit Country, Jamaica, 600 m. elevation, January 12–14, 1909, *W. A. Murrill & W. Harris 964* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

32. **Omphalopsis subavellanea** Murrill, sp. nov.

Pileus broadly convex, slightly umbilicate, gregarious, reaching 8 mm. broad; surface smooth, glabrous, very pale avellaneous, margin entire, concolorous: lamellae decurrent, broad, subdistant, white: stipe subequal, rather short, smooth, glabrous, white above, concolorous below, 1.5 cm. long, 1 mm. thick.

Type collected on a much-decayed, moss-covered log in Troy and Tyre, Cockpit Country, Jamaica, 600 m. elevation, January 12–14, 1909, *W. A. Murrill & W. Harris 1003* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

DOUBTFUL SPECIES

Agaricus (*Omphalia*) *centenarius* Berk. & Curt. Jour. Linn. Soc. **10**: 286. 1868. Not *A. centenarius* Berk. & Curt. 1853. The specimens from Cuba determined as *A. centenarius* by Berkeley are *Omphalopsis euspeirea*.

Agaricus (*Omphalia*) *cyanipes* Frost, Cat. Pl. Amherst 64. 1875. No description. *Omphalia telmatida* Berk. & Cooke, an European species, has a blue stipe, and this is also true of some of the rosy-spored agarics.

Agaricus (*Omphalia*) *lapidescens* (Horan.) Cohn & Schröt. Abh. Naturw. Ver. Hamb. **11**[2]: 15. 1891. Reported as collected in the sclerotium form in Porto Rico by Sintenis (Engl. Bot. Jahrb. **17**: 498. 1893). These specimens are at Berlin and closely resemble small, marble-like sclerotia found by Harris and Murrill in a clay road at Cinchona, Jamaica, January 5, 1909. Schröter succeeded in 1890 in obtaining hymenophores of an *Omphalia* from the sclerotia of *Mylitta lapidescens* Horaninow.

Delicatula microscopica (Wirtgen) Fayod, Ann. Sci. Nat. Hist. VII. **9**: 313. 1889. (*Agaricus microscopicus* Wirtgen, Flora **18**: 321. 1835.) This minute plant has been reported from New Jersey and Guadeloupe, but the determinations are probably incorrect. Fayod included this species with *O. integrella* in his genus *Delicatula*.

Mycena rorida (Fries) Quél. Champ. Jura Vosg. 74. 1872. (*Agaricus roridus* Fries, Obs. Myc. **1**: 84. 1815.) Reported by Peck and others from various parts of the United States.

Omphalia behringensis (Berk. & Curt.) Sacc. Syll. Fung. **5**: 319. 1887. (*Agaricus* (*Omphalia*) *behringensis* Berk. & Curt. Proc. Am. Acad. **4**: 114. 1860.) Described from Arakamtchetchene Island, Bering Strait. The specimens at Kew are rather poor.

Omphalia camptophylla (Berk.) Sacc. Syll. Fung. **5**: 329. 1887. (*Agaricus* (*Omphalia*) *camptophyllus* Berk. in Smith, Engl. Fl. **5**[2]: 62. 1836.) Reported from Massachusetts and Rhode Island.

Omphalia chlorocyana (Pat.) Sacc. Syll. Fung. **5**: 336. 1887. (*Agaricus* (*Omphalia*) *chlorocyanus* Pat. Tab. Fung. **1**: 145. 1885.) Specimens collected by Earle in Alabama, which are unfortunately without field notes, appear to be related to this species.

Omphalia grisea (Batsch) Quél. Ench. Fung. 45. 1886. (*Agaricus griseus* Batsch, Elench. Fung. Contin. **1**: 87. 1786.) Reported from Maryland and Alabama. Not seen at Albany. This species greatly resembles *Prunulus* and the lamellae are only slightly decurrent.

Omphalia hepatica P. Karst. Bidr. Finl. Fungi **32**: 133. 1879. This species appears to be credited to Batsch and Fries and may be nothing more than *Agaricus subhepaticus* Batsch. (See Batsch's *figure 211.*) It is reported from Massachusetts, Connecticut, and Rhode Island, but is not to be found at Albany.

Omphalia rhyssospora (Mont.) Sacc. Syll. Fung. **5**: 333. 1887. (*Agaricus* (*Omphalia*) *rhyssosporus* Mont. Syll. Crypt. 113. 1856.) Described from specimens collected on fallen leaves in woods near Columbus, Ohio. The types at Paris are poor, but show that the species is not an *Omphalia.* From the specific name, one would judge that the spores were rose-colored and the species is probably an *Entoloma.*

Omphalia subgrisea Peck, Ann. Rep. N. Y. State Mus. **41**: 63. 1888. Described from specimens collected on decayed wood of yellow birch at Blue Mountain Lake in the Adirondacks. The types are not to be found at Albany, the only specimens there being from Port Jefferson and these are questioned as to determination. Peck has remarked that this species is probably an *Eccilia.*

33. **GALACTOPUS** Earle, Bull. N. Y. Bot. Gard. **5**: 426. 1909.

Pileus convex, the margin usually at first appressed: lamellae adnate or adnexed, bleeding when cut: spores hyaline: stipe central, tubular, bleeding when cut.

Type species, *Agaricus haematopus* Pers.

Lamellae not becoming blackish on drying.	1. *G. rugosodiscus.*
Lamellae becoming blackish on drying.	
Pseudolatex white or watery.	2. *G. succosus.*
Pseudolatex red.	
Lamellae white, the edges concolorous.	3. *G. haematopus.*
Lamellae pale-reddish, the edges purplish-black.	4. *G. sanguinolentus.*

1. **Galactopus rugosodiscus** (Peck) Murrill.

Agaricus (*Omphalia*) *rugosodiscus* Peck, Bull. Buffalo Soc. Nat. Sci. **1**: 48. 1873.
Mycena rugosodisca Sacc. Syll. Fung. **5**: 293. 1887.
Omphalia rugosodisca Peck, Ann. Rep. N. Y. State Mus. **45**: 34. 1893.

Pileus thin, broadly convex or nearly plane, umbilicate-obtuse or slightly umbonate, sometimes slightly umbilicate, 12–24 mm. broad; surface glabrous, hygrophanous, rugose on the disk, brown and striatulate when moist, paler when dry, margin thin, often wavy: lamellae narrow, crowded, arcuate or plane, adnate, white, emitting drops of a watery juice where cut or broken: spores ellipsoid, 6–7 × 4 μ: stipe short, glabrous, whitish or colored like the pileus, hollow, often curved, 2.5 cm. long, 1–2 mm. thick.

TYPE LOCALITY: Worcester, New York.
HABITAT: On decaying prostrate trunks of coniferous trees, especially hemlock.
DISTRIBUTION: Maine and New York.

2. **Galactopus succosus** (Peck) Murrill.

Agaricus (*Collybia*) *succosus* Peck, Bull. Buffalo Soc. Nat. Sci. **1**: 46. 1873.
Mycena succosa Sacc. Syll. Fung. **5**: 293. 1887.

Pileus rather firm, campanulate or convex, cespitose, 2–4 cm. broad; surface minutely tomentose, cinereous or very pale reddish-gray, darker at the center, the margin exceeding the lamellae: context abounding in a thin watery or serum-like juice, changing to purplish and black when cut; lamellae slightly ascending, thin, crowded, emarginate with a slight decurrent tooth, tapering toward the outer extremity, whitish with a pale-reddish-gray tint: spores subglobose, minute, 4–5 μ: stipe firm, equal or slightly tapering upward, often curved, minutely tomentose, containing a whitish pith, pale-reddish-gray at the apex, dark-reddish-gray below, 4–8 cm. long, 2–3 mm. thick.

TYPE LOCALITY: Portville, Cattaraugus County, New York.
HABITAT: On decayed wood or humus in woods.
DISTRIBUTION: Canada, New England, and New York; also reported from Michigan.
ILLUSTRATION: Mycologia 6: *pl. 137, f. 9.*

3. **Galactopus haematopus** (Pers.) Earle, Bull. N. Y. Bot. Gard. 5: 426. 1909.

Agaricus haematopus Pers. Obs. Myc. 2: 56. 1799.
Mycena haematopus Quél. Champ. Jura Vosg. 225. 1872.

Pileus subfleshy, conic to campanulate-obtuse, cespitose, 1–2.5 cm. broad; surface smooth, white to dark-reddish, margin sterile, slightly striate, denticulate: lamellae adnate, subdistant, white, concolorous on the edges: spores 6–9 × 5–6 μ: stipe rigid, concolorous, white-powdery or villous-downy, exuding a blood-red juice when injured, 3–8 cm. long, 2–3 mm. thick.

TYPE LOCALITY: Germany.
HABITAT: On dead wood.
DISTRIBUTION: New England to North Carolina and Ohio and west to Washington, Oregon, and California; also in Europe.
ILLUSTRATIONS: Atk. Stud. Am. Fungi *f. 100;* Fries, Ic. Myc. *pl. 83, f. 1;* N. Marsh. Mushr. Book, facing page 93.

4. **Galactopus sanguinolentus** (Alb. & Schw.) Murrill.

Agaricus (*Mycena*) *sanguinolentus* Alb. & Schw. Consp. Fung. 196. 1805.
Mycena sanguinolenta Quél. Champ. Jura Vosg. 225. 1872.

Pileus membranous, conic to campanulate-convex, 0.5–1 cm. broad; surface opaque-red at first, then gradually more dilute, the umbo deep-purple, margin striate: lamellae ascending, crowded, linear, pale-reddish, purplish-black on the edges: spores cylindric-ellipsoid, 8–11 × 4.5–5 μ; cystidia pointed, reddish-brown, 30 × 11–13 μ: stipe weak, flaccid, subconcolorous, glabrous, exuding reddish drops when injured, 6–11 cm. long.

TYPE LOCALITY: Germany.
HABITAT: In sphagnum and other mosses or among leaves in moist places.
DISTRIBUTION: New England and New York, and reported from Michigan and New Jersey; also in Europe.
ILLUSTRATION: Fries, Ic. Myc. *pl. 83, f. 3.*

DOUBTFUL SPECIES

Mycena galopus (Pers.) Quél. Champ. Jura Vosg. 73. 1872. *Agaricus galopus* Pers. Obs. Myc. 2: 56. 1799. Described from Germany, occurring among moss. The species is reported from Massachusetts and the Carolinas by the older mycologists. Authentic European specimens from Bresadola very much resemble *Prunulus alcaliniformis* in the dried state.

34. **PRUNULUS** (Cesalp.) S. F. Gray, Nat. Arr. Brit. Pl. 1: 630. 1821.

Agaricus § *Mycena* Fries, Syst. Myc. 1: 140. 1821.
Mycena Quél. Champ. Jura Vosg. 68. 1872.
Mycenula P. Karst. Medd. Soc. Faun. Fl. Fenn. 16: 89. 1889.
Insiticia Earle, Bull. N. Y. Bot. Gard. 5: 425. 1909.
Basidopus Earle, Bull. N. Y. Bot. Gard. 5: 426. 1909.
Collopus Earle, Bull. N. Y. Bot. Gard. 5: 426. 1909.
Stereopodium Earle, Bull. N. Y. Bot. Gard. 5: 426. 1909.
Linopodium Earle, Bull. N. Y. Bot. Gard. 5: 427. 1909.

Pileus convex, the margin at first appressed, solitary, gregarious, or densely cespitose: lamellae adnate or adnexed, white or rarely bright-colored, sometimes changing to gray or reddish: spores hyaline: stipe central, tubular, dry or viscid, not bleeding when cut.

Type species, *Prunulus denticulatus* (Bolt.) S. F. Gray.

I. SPECIES OCCURRING IN TEMPERATE NORTH AMERICA, EXCEPT THOSE CONFINED TO THE PACIFIC COAST

Pileus 1 cm. or less broad, sometimes reaching 1.5 cm. broad.
  Pileus white or whitish.
    Pileus 2–4 mm. broad, minutely scaly or furfuraceous.
      Stipe 7 mm. long. — 1. *P. lepiotiformis.*
      Stipe 2.5 cm. long. — 2. *P. tenerrimus.*

Pileus 4–12 mm. broad.
Stipe 8–15 mm. long. — 3. *P. crystallinus.*
Stipe 1.5–2.5 cm. long. — 4. *P. parvulus.*
Stipe 4–5 cm. long.
Stipe deeply radicate. — 5. *P. radicatellus.*
Stipe not radicate.
Pileus 6–8 mm. broad. — 6. *P. delectabilis.*
Pileus 8–12 mm. broad. — 7. *P. roseocandidus.*
Pileus pale-bluish-green. (32. *P. corticalis* is sometimes bluish.) — 8. *P. cyaneobasis.*
Pileus reddish-violet. — 9. *P. Meliigena.*
Pileus pink or red.
Stipe 1.5 cm. long; pileus bright-red. — 10. *P. amabillissimus.*
Stipe 3–5 cm. long.
Stipe rose-colored. — 11. *P. roseolus.*
Stipe whitish, sometimes rose-tinted at the apex.
Lamellae distant. — 12. *P. roseipallens.*
Lamellae crowded. — 7. *P. roseocandidus.*
Pileus white, brown-tinted on the disk. — 13. *P. odorifer.*
Pileus some shade of yellow, isabelline, or fulvous.
Pileus pale-smoky-yellow; lamellae pale-yellow. — 14. *P. flavifolius.*
Pileus pale-yellow to flesh-colored or whitish; lamellae subincarnate. — 15. *P. subincarnatus.*
Pileus pale-reddish-yellow. — 16. *P. leptophyllus.*
Pileus dark-melleous, fading out toward the margin. — 17. *P. melleidiscus.*
Pileus bright-yellow; lamellae and stipe also yellow. — 18. *P. luteopallens.*
Pileus dull-yellow or pale-luteous.
Lamellae white. — 19. *P. Sabali.*
Lamellae yellow. — 20. *P. pulcherrimus.*
Pileus isabelline, densely cespitose. — 21. *P. connatipes.*
Pileus avellaneous-isabelline, gregarious. — 22. *P. farinaceus.*
Pileus pale-fulvous, gregarious to subcespitose. — 23. *P. cervinialbus.*
Pileus some shade of gray or brown, varying to reddish-brown in *P. corticalis.*
Pileus grayish, avellaneous, or pale-brown.
Hymenophore occurring on the ground among leaves or mosses.
Pileus 2–8 mm. broad.
Stipe 1–2 cm. long; pileus only 2 mm. broad. — 24. *P. minutissimus.*
Stipe 2.5–6 cm. long.
Surface viscid. — 25. *P. vulgaris.*
Surface not viscid.
Pileus 2–6 mm. broad. — 26. *P. constans.*
Pileus 6–8 mm. broad. — 27. *P. albogriseus.*
Pileus 8–12 mm. broad.
Lamellae entirely white, even when dry.
Pileus umbilicate. — 28. *P. miratus.*
Pileus subumbonate. — 29. *P. latifolius.*
Lamellae grayish or bluish-gray when dry. — 30. *P. caesius.*
Lamellae white or whitish with purple edges. — 31. *P. capillaripes.*
Hymenophore occurring on dead wood.
Pileus 2–6 mm. broad. — 32. *P. corticalis.*
Pileus 6–15 mm. broad.
Hymenophore solitary.
Stipe 1 cm. long. — 33. *P. brevipes.*
Stipe 4–5 cm. long. — 34. *P. subfumosus.*
Hymenophore densely cespitose.
Pileus umbonate; stipe 5 cm. long. — 35. *P. intertextus.*
Pileus not umbonate; stipe 3 cm. long. — 36. *P. avellaneus.*
Pileus dark-brown, sometimes paler on drying.
Stipe 1.5–2.5 cm. long. — 37. *P. curvipes.*
Stipe 2.5–4 cm. long.
Stipe 1 mm. thick. — 38. *P. atribrunneus.*
Stipe 2–2.5 mm. thick. — 39. *P. hemisphaericus.*
Stipe 5–6.5 cm. long. — 40. *P. vexans.*
Stipe 8–10 cm. long. — 41. *P. atroalboides.*
Stipe 13–18 cm. long. — 42. *P. praelongus.*
Pileus reaching 2 cm. or more broad.
Hymenophore occurring on the ground in soil or among leaves or mosses.
Pileus whitish, flavid, or fuscous; lamellae white. — 43. *P. clavicularis.*
Pileus yellow, viscid; lamellae pale-yellow. — 44. *P. acutoconicus.*
Pileus dark-tan or nearly fuscous; lamellae white. — 45. *P. ludovicianus.*
Pileus some shade of gray, grayish-brown, or avellaneous, 1–2.5 cm. broad.
Pileus and stipe viscid; stipe bright-yellow, 5–30 cm. long. — 46. *P. splendidipes.*
Pileus and stipe not viscid.
Stipe 5–7 cm. long.
Stipe glabrous. — 47. *P. alcaliniformis.*
Stipe densely scabrous. — 48. *P. scabripes.*

Stipe 8–10 cm. long. 49. *P. paluster.*
Stipe 15 cm. long. 50. *P. cymbaliferus.*
Stipe 3–5 cm. long. 51. *P. murinus.*
Pileus some shade of red, purple, or violet.
Pileus livid-purple; lamellae blackish-violet, dentate. 52. *P. denticulatus.*
Pileus not as above; lamellae pale-violet. 53. *P. purus.*
Hymenophore occurring on dead wood.
Pileus pallid, varying to pale-yellowish or pale-avellaneous.
Disk concolorous.
Pileus umbonate; stipe 4–10 cm. long. 54. *P. adirondackensis.*
Pileus not umbonate; stipe 3–4 cm. long.
Stipe snow-white throughout. 55. *P. niveipes.*
Stipe pale-ochraceous-cinereous. 56. *P. ochraceicinereus.*
Disk brownish or bay.
Pileus not umbonate, becoming slightly umbilicate. 57. *P. pectinatus.*
Pileus umbonate or obtuse. 58. *P. ligniarius.*
Pileus red or orange; lamellae and stipe also orange. 59. *P. Leaianus.*
Pileus purplish-brown to lilac-brown; lamellae purplish-brown on the edges. 60. *P. purpureofuscus.*
Pileus gray, avellaneous, or brownish, sometimes reddish.
Stipe 1–2 mm. thick, rarely reaching 3 mm. in *P. rugosoides.*
Stipe radicate, 4–8 cm. long. 61. *P. rugosoides.*
Stipe not radicate.
Lamellae denticulate, pale-brown, purplish on the edges. 62. *P. rutilantiformis.*
Lamellae not denticulate, white or grayish.
Stipe 3–4 cm. long.
Surface gray, slightly rosy-isabelline on the disk. 63. *P. tenuiculus.*
Surface avellaneous at maturity, fuliginous on the disk. 64. *P. subtenuipes.*
Stipe 5–6 cm. long; surface covered with compacted fibrils which split radially. 65. *P. atridiscus.*
Stipe 2–5 mm. thick.
Stipe 2.5 cm. long. 66. *P. semivestipes.*
Stipe 3 cm. or more long.
Pileus and stipe viscid. 67. *P. epipterygius.*
Pileus and stipe not viscid.
Lamellae grayish-white. 68. *P. fuliginosus.*
Lamellae white.
Stipe 3–5 cm. long. 69. *P. collybiiformis.*
Stipe 5–10 cm. long.
Hymenophore gregarious. 70. *P. atroumbonatus.*
Hymenophore cespitose. 71. *P. galericulatus.*

II. Species occurring on the Pacific coast

Pileus 1 cm. or less broad; surface white, yellow, or red.
Pileus white or whitish.
Stipe 3 cm. long. 72. *P. leucophaeus.*
Stipe 6–10 cm. long. 73. *P. paludicola.*
Pileus yellow or orange.
Pileus flavous, with luteous tint on the disk; lamellae citrinous. 74. *P. flavicitrinus.*
Pileus citrinous with orange umbo; lamellae white. 75. *P. aurantiidiscus.*
Pileus and stipe orange; lamellae white. 76. *P. aurantiacus.*
Pileus scarlet, miniatous, or incarnate.
Lamellae reddish on the edges. 77. *P. strobilinoides.*
Lamellae white or yellowish on the edges.
Stipe rosy-isabelline, 1.5–3.5 cm. long. 10. *P. amabillissimus.*
Stipe pale-yellow, 6 cm. long. 78. *P. fusipes.*
Pileus 1–5 cm. broad.
Lamellae purplish-brown on the edges. 79. *P. elegantulus.*
Lamellae not purplish-brown on the edges.
Pileus caesious with an aeruginous tint. 80. *P. caesiialbus.*
Pileus some shade of red or violet. 52. *P. purus.*
Pileus some shade of avellaneous, brown, or purplish-brown.
Pileus 1–2.5 cm. broad.
Stipe 2–6 cm. long.
Lamellae gray, at least when dry; hymenophore cespitose on dead wood. 81. *P. occidentalis.*
Lamellae cream-colored; hymenophore gregarious among pine needles. 82. *P. plumbeibrunneus.*
Stipe 6 cm. or more long.
Stipe 6–10 cm. long.
Pileus dull-brownish; stipe light-brown. 83. *P. myceliosus.*
Pileus avellaneous, blackish-brown on the disk; stipe steel-gray. 84. *P. Abramsii.*
Stipe 15 cm. long. 85. *P. longipes.*
Pileus 3–5 cm. broad.
Lamellae distant; pileus avellaneous. 86. *P. magnus.*
Lamellae crowded; pileus pale-avellaneous. 87. *P. Grantii.*

III. SPECIES OCCURRING IN TROPICAL NORTH AMERICA

Pileus white, whitish, or cinereous, sometimes differently colored on the disk.
  Surface entirely white.
    Pileus minute, 1–4 mm. broad.
      Stipe short, 4–6 mm. — 88. *P. Myrciae.*
      Stipe much longer, 1–2.5 cm.
        Pileus 2 mm. broad, not striate. — 89. *P. alphitophorus.*
        Pileus 4 mm. broad, striate. — 90. *P. subpulverulentus.*
    Pileus much larger, 1.5–2 cm. broad. — 91. *P. trojanus.*
  Surface white, fuscous on the umbo. — 92. *P. roridulus.*
  Surface cinereous, pale-avellaneous on the umbo. — 93. *P. margarita.*
Pileus and lamellae greenish-gray. — 94. *P. viridigriseus.*
Pileus yellowish, avellaneous, or brownish.
  Pileus 4–8 mm. broad.
    Stipe 2 cm. long.
      Pileus solitary or gregarious, striate.
        Surface pale-avellaneous, ashy-white on the disk. — 95. *P. cinereiavellaneus.*
        Surface avellaneous, with a fumosous tint, the disk concolorous. — 96. *P. fumosiavellaneus.*
      Pileus cespitose, not striate. — 97. *P. avellaneigriseus.*
    Stipe 5–7 cm. long. — 98. *P. gracillipes.*
  Pileus about 1 cm. broad.
    Surface avellaneous, striate. — 99. *P. argillaceus.*
    Surface dark-brown, not striate. — 100. *P. pubescens.*
  Pileus 1.5–2 cm. broad.
    Surface pale-isabelline or avellaneous. — 101. *P. cinchonensis.*
    Surface ochraceous-brown. — 102. *P. carbonicola.*
Pileus lilac or some shade of red.
  Pileus 5–8 mm. broad.
    Surface lilac-colored. — 103. *P. syringeus.*
    Surface dark-testaceous. — 104. *P. testaceus.*
  Pileus 1–2 cm. broad; stipe 2–3 cm. long.
    Surface latericeous; lamellae testaceous. — 105. *P. latericius.*
    Surface chestnut-red; lamellae fawn-colored. — 106. *P. corrugatus.*
  Pileus 2–5 cm. broad; stipe 5–8 cm. long. — 52. *P. purus.*

1. **Prunulus lepiotiformis** Murrill, sp. nov.

Pileus minute, broadly convex, not fully expanding, solitary, 3 mm. broad; surface dry smooth, white, minutely and densely pubescent-scaly, margin entire, concolorous: lamellae subdistant, rather broad, inserted, adnexed to nearly free, white to pale-yellowish: stipe short, filiform, smooth, white above, grayish-brown and whitish-pubescent below, 7 mm. long.

Type collected on much decayed hemlock wood in woods at Unaka Springs, Tennessee, August 18–24, 1904, *W. A. Murrill 716* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

2. **Prunulus tenerrimus** (Berk.) Murrill.

Agaricus (*Mycena*) *tenerrimus* Berk. in Smith, Engl. Fl. 5[2]: 61. 1836.
Mycena tenerrima Quél. Champ. Jura Vosg. 75. 1872.

Pileus thin, delicate, flaccid, globose to convex, gregarious, 2–4 mm. broad; surface pure-white, densely furfuraceous: lamellae free, subremote, ventricose, distant, white: spores globose, hyaline: stipe capillary, white, at first clothed like the pileus but becoming subglabrous in part, discoid at the base, 2.5 cm. long, scarcely 1 mm. thick.

TYPE LOCALITY: England.
HABITAT: On pine cones and among pine needles.
DISTRIBUTION: New York; also in Europe.

3. **Prunulus crystallinus** (Peck) Murrill.

Mycena crystallina Peck, Ann. Rep. N. Y. State Mus. **41**: 63. 1888.

Pileus membranous, conic to subplane, slightly umbonate, 6–12 mm. broad; surface beset with yellow, viscid particles, white, margin reflexed, even or obscurely striate: lamellae adnate, crowded, narrow, thin, white: stipe short, slender, concolorous, adorned like the pileus, hollow, white-lanate at the base, 8–15 mm. long.

TYPE LOCALITY: Catskill Mountains, New York.
HABITAT: Fallen pine needles.
DISTRIBUTION: Known only from the type locality.

4. **Prunulus parvulus** Murrill.

Agaricus (*Mycena*) *minutulus* Peck, Bull. Buffalo Soc. Nat. Sci. 1: 47. 1873. Not *A. minutulus* Fries, 1818.
Mycena minutula Sacc. Syll. Fung. 5: 263. 1887.

Pileus campanulate or convex, papillate, gregarious, 4–8 mm. broad; surface glabrous, smooth, white, margin striatulate: lamellae broad, subdistant, with a slight decurrent tooth, interveined, white: stipe short, thin, firm, glabrous or farinaceous, white, 1.5–2.5 cm. long.

TYPE LOCALITY: Portville, New York.
HABITAT: On bark of prostrate trunks in woods.
DISTRIBUTION: Known only from the type locality.

5. **Prunulus radicatellus** (Peck) Murrill.

Agaricus (*Mycena*) *radicatellus* Peck, Ann. Rep. N. Y. State Mus. **31**: 32. 1879.
Mycena radicatella Sacc. Syll. Fung. **5**: 275. 1887.

Pileus thin, campanulate, obtuse or subumbonate, 8–12 mm. broad; surface glabrous, whitish, margin striate: lamellae crowded, narrow, ascending, white: spores subglobose, rough, 8–10 μ: stipe firm, thin, deeply radicate, glabrous, whitish, 4–5 cm. long.

TYPE LOCALITY: Griffins, Delaware County, New York.
HABITAT: On mossy ground in woods.
DISTRIBUTION: Known only from the type locality.

6. **Prunulus delectabilis** (Peck) Murrill.

Agaricus (*Mycena*) *delectabilis* Peck, Ann. Rep. N. Y. State Mus. **27**: 93. 1875.
Mycena delectabilis Sacc. Syll. Fung. **5**: 262. 1887.

Pileus conic, subacute, thin, 6–8 mm. broad; surface white, margin striate: context having an alkaline odor; lamellae arcuate-decurrent, crowded, white: stipe slender, equal, smooth, with hairy filaments at the base, 4 cm. long, 1 mm. thick.

TYPE LOCALITY: Forestburgh, New York.
HABITAT: Among mosses in woods.
DISTRIBUTION: Known only from the type locality.
ILLUSTRATIONS: Ann. Rep. N. Y. State Mus. **27**: *pl. 1, f. 22–25.*

7. **Prunulus roseocandidus** (Peck) Murrill.

Agaricus (*Mycena*) *roseocandidus* Peck, Bull. Buffalo Soc. Nat. Sci. 1: 47. 1873.
Mycena roseocandida Sacc. Syll. Fung. 5: 262. 1887.

Pileus convex or broadly campanulate, 8–12 mm. broad; surface usually pure-white, but sometimes having a delicate rosy hue, except on the margin, which is striate: lamellae crowded, uncinate, white or rosy: stipe thin, smooth, white, sometimes rose-tinted at the apex, glabrous, 5 cm. long.

TYPE LOCALITY: Adirondack Mountains, New York.
HABITAT: Among mosses in woods.
DISTRIBUTION: Known only from the type locality.

8. **Prunulus cyaneobasis** (Peck) Murrill.

Agaricus (*Mycena*) *subcoeruleus* Peck, Bull. Buffalo Soc. Nat. Sci. 1: 47. 1873. Not *A. subcoeruleus* With. 1792.
Mycena cyaneobasis Peck, Ann. Rep. N. Y. State Mus. **51**: 284. 1898.
Mycena cyanothrix Atk. Stud. Am. Fungi 98. 1900.

Pileus thin, submembranous, conic or subcampanulate, cespitose, 6–15 mm. broad; surface glabrous, viscid and bright-blue when young, caesious or grayish with age, the center tinged with fuscous, margin faintly striate to the umbo: context at first having a taste like radishes, then becoming bitter; lamellae adnexed, crowded, narrow, white to grayish, fimbriate on the edges: spores subglobose, smooth, hyaline, 6–8 μ: stipe slender, firm but brittle, radicate, hollow, pruinose or pubescent-fibrillose, whitish or rosy-isabelline, with blue or green mycelium at the base, 4–9 cm. long, 2 mm. thick.

TYPE LOCALITY: North Elba, New York.
HABITAT: On decaying trunks of beech, birch, and possibly other deciduous trees.
DISTRIBUTION: New York, New Jersey, and Ohio.
ILLUSTRATIONS: Ann. Rep. N. Y. State Mus. **51**: *pl. B, f. 1–7;* Atk. Stud. Am. Fungi. *f. 99.*

9. **Prunulus Meliigena** (Berk. & Cooke) Murrill.

Agaricus (*Mycena*) *Meliigena* Berk. & Cooke, Grevillea **6**: 129. 1878.
Mycena Meliigena Sacc. Syll. Fung. **5**: 302. 1887.

Pileus thin, hemispheric, 2–3 mm. broad; surface reddish-violet, margin sulcate: lamellae adnate, uncinate, concolorous: spores subglobose, papillate, 10 μ: stipe short, furfuraceous, 4–6 mm. long.

TYPE LOCALITY: South Carolina.
HABITAT: On bark of *Melia*, *Diospyros*, etc.
DISTRIBUTION: South Carolina.

10. **Prunulus amabillissimus** (Peck) Murrill.

Agaricus (*Mycena*) *amabillissimus* Peck, Ann. Rep. N. Y. State Mus. **39**: 39. 1887.
Mycena amabillissima Sacc. Syll. Fung. **9**: 37. 1891.

Pileus submembranous, campanulate, obtuse or acute, 6–12 mm. broad; surface glabrous, bright-red or scarlet, margin obscurely striatulate when moist: lamellae ascending, whitish or tinged with red: stipe pallid, slender, subpellucid, with a white villosity at the base, 1.5 cm. long.

TYPE LOCALITY: Karner, New York.
HABITAT: Among mosses and ferns or on dead wood or leaves in moist situations.
DISTRIBUTION: New York; also in Washington and Oregon.
ILLUSTRATION: Mycologia **5**: *pl. 92, f. 8*.

11. **Prunulus roseolus** Murrill.

Agaricus rosellus Fries, Syst. Myc. **1**: 151. 1821. Not *A. rosellus* Batsch, 1786.
Mycena rosella Quél. Champ. Jura Vosg. 221. 1872.

Pileus membranous, hemispheric, obtusely umbonate, gregarious, 4–5 mm. or more broad; surface rose-colored, expallent, margin striate: lamellae adnate, rose-colored, darker on the edges: spores 6–8 $\times$ 4 μ: stipe thin, soft, rose-colored, white-fibrous at the base.

TYPE LOCALITY: Europe.
HABITAT: On the ground in coniferous woods.
DISTRIBUTION: New England, New York, and New Jersey; also in Europe.
EXSICCATI: Ellis & Ev. N. Am. Fungi *2006*.

12. **Prunulus roseipallens** Murrill, sp. nov.

Pileus rather tough, thin, campanulate, gregarious, 1–1.5 cm. broad; surface smooth, glabrous, not striate, shell-pink, paler with age: lamellae adnexed, distant, rather narrow, white tinged with pink: spores ellipsoid, smooth, hyaline, 6–7 $\times$ 3–4 μ: stipe equal, curved, smooth, glabrous, whitish, pruinose above, 3–5 cm. long, 1–2 mm. thick.

Type collected on the ground among rotten leaves at Redding, Connecticut, August 25, 1902, *F. S. Earle 1289* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

13. **Prunulus odorifer** (Peck) Murrill.

Agaricus (*Mycena*) *odorifer* Peck, Ann. Rep. N. Y. State Mus. **30**: 39. 1878.
Mycena odorifera Sacc. Syll. Fung. **5**: 295. 1887.

Pileus thin, hemispheric to expanded, 4–6 mm. broad; surface white, glabrous, brown-tinted on the disk: lamellae adnate or subdecurrent, subarcuate, the edges crenulate, white: spores narrowly ellipsoid, 5 μ long: stipe coriaceous, equal, viscid, glabrous, white or pale-brown, white-villous at the base, 2.5–4 cm. long.

TYPE LOCALITY: Adirondack Mountains, New York.
HABITAT: In moss.
DISTRIBUTION: New York.

14. **Prunulus flavifolius** (Peck) Murrill.

Mycena flavifolia Peck, Bull. N. Y. State Mus. 167: 28. 1913.

Pileus thin, slightly submembranous, conic or convex, sometimes slightly umbonate, gregarious, 1 cm. broad; surface glabrous, pale-smoky-yellow, becoming pale-pinkish-brown

or subalutaceous on drying, sulcate-striate, somewhat plicate-crenate on the margin: lamellae thin, crowded, broad at the outer extremity, narrowed toward the stipe, pale-yellow, becoming pallid on drying: spores ellipsoid or subovoid, 6–8 × 4–5 μ: stipe slender, equal, glabrous, hollow, chestnut-colored.

TYPE LOCALITY: North Elba, New York.
HABITAT: Under balsam fir trees.
DISTRIBUTION: Known only from the type locality.

15. **Prunulus subincarnatus** (Peck) Murrill.

Agaricus subincarnatus Peck, Ann. Rep. N. Y. State Cab. **23**: 83. 1872.
Mycena subincarnata Sacc. Syll. Fung. **5**: 262. 1887.

Pileus hemispheric, convex or expanded, gregarious, 6–15 mm. broad; surface pale-yellow or flesh-colored to whitish, margin striatulate: lamellae subincarnate, uncinate, decurrent-toothed: stipe slender, hollow, white-villose at the base, 2.5–4 cm. long.

TYPE LOCALITY: Center, New York.
HABITAT: Under pine trees.
DISTRIBUTION: New York and New Jersey.

16. **Prunulus leptophyllus** (Peck) Murrill.

Agaricus (*Mycena*) *leptophyllus* Peck, Ann. Rep. N. Y. State Mus. **24**: 63. 1872.
Mycena leptophylla Sacc. Syll. Fung. **5**: 304. 1887.

Pileus thin, campanulate or convex, subpapillate, 6–10 mm. broad; surface glabrous, pale-reddish-yellow, brighter on the disk, margin striatulate when moist: lamellae crowded, narrow, uncinate, white or yellowish-flesh-colored, spotted, the ends accuminate: spores broadly ellipsoid, smooth, hyaline, 7–8 × 5–6 μ: stipe thin, tough, glabrous, whitish, hollow, 1.5–4 cm. long, 1 mm. thick.

TYPE LOCALITY: Greig, New York.
HABITAT: On old mossy logs and rotten wood in woods.
DISTRIBUTION: Known only from the type locality.

17. **Prunulus melleidiscus** Murrill, sp. nov.

Pileus convex to expanded, solitary or gregarious, 5–7 mm. broad; surface viscid, shining, smooth, striate, dark-melleous on the disk, gradually paler toward the margin, which is white, entire, and translucent: lamellae adnexed, rather crowded, ventricose, of medium width, white: stipe slender, equal, viscid, smooth, glabrous, white, mycelioid at the base, 3–4 cm. long, 1 mm. thick.

Type collected among leaf-mold in woods on the north shore of Sebec Lake, Piscataquis County, Maine, September 16, 17, 1905, *W. A. Murrill 2602* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

18. **Prunulus luteopallens** (Peck) Murrill.

Agaricus (*Mycena*) *luteopallens* Peck, Ann. Rep. N. Y. State Mus. **32**: 27. 1880.
Mycena luteopallens Sacc. Syll. Fung. **9**: 37. 1891.

Pileus thin, submembranous, convex, solitary or cespitose, 6–15 mm. broad; surface glabrous, bright-yellow, paler when dry, margin striatulate when moist: lamellae subdistant, slightly arcuate, yellow: stipe equal or tapering upward, smooth, yellow, hollow, having yellow hairs at the base, usually long-radicate, 5 cm. long, 2 mm. thick.

TYPE LOCALITY: Adirondack Mountains, New York.
HABITAT: Among fallen leaves in woods, often attached to buried wood or walnuts.
DISTRIBUTION: New York, Connecticut, and New Jersey.
ILLUSTRATION: Mycologia **7**: *pl. 160, f. 6*.

19. **Prunulus Sabali** Murrill, sp. nov.

Pileus convex, scarcely umbonate, not fully expanding, solitary, 1 cm. broad; surface glabrous, rugose, striate, dry, pale-luteous, slightly darker on the disk: lamellae adnate, subdistant, narrow, white: stipe cylindric, glabrous, smooth, white, pubescent at the base, 3 cm. long, 1 mm. thick.

Type collected on a dead petiole of a dwarf palmetto in City Park, New Orleans, Louisiana, September 6, 1908, *F. S. Earle 77* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

20. **Prunulus pulcherrimus** (Peck) Murrill.

Agaricus pulcherrimus Peck, Ann. Rep. N. Y. State Cab. **23**: 83. 1872.
Mycena pulcherrima Sacc. Syll. Fung. **5**: 288. 1887.

Pileus subcampanulate or convex, rarely subumbonate, gregarious, 6–10 mm. broad; surface dull-yellow, a little darker on the disk, margin striatulate: lamellae adnexed, slightly uncinate, broad, subventricose, yellow: stipe thin, concolorous, hollow, white-villose at the base, 2.5–4 cm. long.

TYPE LOCALITY: Center, New York.
HABITAT: Under pine trees.
DISTRIBUTION: New York.

21. **Prunulus connatipes** (Berk. & Curt.) Murrill.

Agaricus (*Mycena*) *connatipes* Berk. & Curt. Ann. Mag. Nat. Hist. III. **4**: 286. 1859.
Mycena connatipes Sacc. Syll. Fung. **14**: 84. 1899.

Pileus hemispheric, densely cespitose, 4–15 mm. broad; surface alutaceous: lamellae adnate with a decurrent tooth, yellowish-white: stipe white, the bases connate, 5 cm. long, 3 mm. thick.

TYPE LOCALITY: North Carolina.
HABITAT: On the ground.
DISTRIBUTION: North Carolina.

22. **Prunulus farinaceus** Murrill, sp. nov.

Pileus conic to convex and at length plane, gibbous, gregarious, reaching 1.5 cm. broad; surface smooth, dry, glabrous, more or less striate, avellaneous-isabelline, margin entire, blackish, (probably frozen): context pallid, the odor and taste decidedly mealy; lamellae adnexed, broad, crowded, ventricose, grayish-white: spores ellipsoid, smooth, hyaline, 7–8 × 4–5 μ: stipe cartilaginous, subequal, quite short for the genus, smooth, polished, brownish, paler at the apex, 3 cm. long, 2 mm. thick.

Type collected in an open mossy field near the New York Botanical Garden, October 8, 911, *W. A. Murrill & E. C. Volkert* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.
ILLUSTRATION: Mycologia **6**: *pl. 137, f. 3.*

23. **Prunulus cervinialbus** Murrill, sp. nov.

Pileus hemispheric, not fully expanding, gregarious to subcespitose, 1 cm. broad; surface dry, glabrous, conspicuously rugose, fawn-colored, margin entire, not striate: lamellae adnate with a decurrent tooth, crowded, narrow, pure-white: cystidia spindle-shaped, 40–50 × 10–15 μ: stipe slender, cylindric, equal, smooth, glabrous, subconcolorous, hollow, 4–7 cm. long, 1 mm. thick.

Type collected by the roadside in the New York Botanical Garden, June 14, 1902, *F. S. Earle 71* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

24. **Prunulus minutissimus** Murrill, sp. nov.

Pileus conic to campanulate, not expanding, slightly umbonate, solitary, 2 mm. broad; surface dry, smooth, glabrous, griseous, murinous on the disk, margin pallid, striate: lamellae adnate, of medium breadth and distance, white: stipe filiform, smooth, glabrous, murinous, 1–2 cm. long, less than 1 mm. thick.

Type collected among leaves in mixed woods at Unaka Springs, Tennessee, August 18–24, 1904, *W. A. Murrill 909* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

25. **Prunulus vulgaris** (Pers.) Murrill.

Agaricus vulgaris Pers. Tent. Disp. Fung. 24. 1797.
Mycena vulgaris Quél. Champ. Jura Vosg. 74. 1872.

Pileus submembranous, convex to depressed, usually papillate, gregarious, 4–8 mm. broad; surface viscid, fuscous or cinereous varying to reddish or whitish, the papilla darker,

margin slightly striate: lamellae broad, distant, adnate or subdecurrent, thin, white: spores hyaline, ellipsoid, 3–4 × 2 μ: stipe tough, fibrillose-radicate, very viscid, cinereous, fistulose, white-strigose at the base, 2.5–6 cm. long, 2–5 mm. thick.

TYPE LOCALITY: Europe.
HABITAT: On pine needles in forests.
DISTRIBUTION: New York; also in Europe.
ILLUSTRATION: Pers. Ic. Descr. Fung. *pl. 19, f. 3.*
EXSICCATI: Thüm. Myc. Univ. *1101.*

26. **Prunulus constans** (Peck) Murrill.

Agaricus (Mycena) constans Peck, Ann. Rep. N. Y. State Mus. **27**: 93. 1875.
Mycena constans Sacc. Syll. Fung. **5**: 296. 1887.

Pileus submembranous, campanulate or convex, 2–6 mm. broad; surface pale-cinereous, margin striate: odor alkaline; lamellae uncinate, crowded, ascending, white: stipe thin, equal, glabrous, dry, concolorous, filamentous at the base, 5 cm. long.

TYPE LOCALITY: Forestburgh, New York.
HABITAT: Among moss in woods.
DISTRIBUTION: New York.

27. **Prunulus albogriseus** (Peck) Murrill.

Mycena albogrisea Peck, Bull. N. Y. State Mus. 116: 27. 1907.

Pileus thin, submembranous, ovoid or subcampanulate, obtuse, 6–8 mm. broad, rarely reaching 10 mm.; surface glabrous, sulcate-striate, grayish-white, assuming a slightly darker or smoky tint on drying: lamellae rather thick, broad, distant, adnate, concolorous: spores 7–8 × 4–5 μ: stipe slender, glabrous, hollow, paler than the pileus, with a whitish, strigose villosity at the base, 2.5–5 cm. long, about 1 mm. thick.

TYPE LOCALITY: Bolton, Warren County, New York.
HABITAT: Attached to fallen leaves of coniferous trees.
DISTRIBUTION: Known only from the type locality.

28. **Prunulus miratus** (Peck) Murrill.

Agaricus (Mycena) miratus Peck, Bull. Buffalo Soc. Nat. Sci. **1**: 48. 1873.
Mycena mirata Sacc. Syll. Fung. **5**: 290. 1887.

Pileus thin, campanulate, umbilicate, 8–10 mm. broad; surface glabrous, smooth, cinereous, margin striate: lamellae crowded, narrow, slightly uncinate, whitish: stipe smooth, whitish, long, filiform, radicate, villose at the base, 5 cm. long.

TYPE LOCALITY: Center, New York.
HABITAT: Among fallen leaves in copses.
DISTRIBUTION: Known only from the type locality.

29. **Prunulus latifolius** (Peck) Murrill.

Agaricus latifolius Peck, Ann. Rep. N. Y. State Cab. **23**: 81. 1872.
Mycena latifolia Sacc. Syll. Fung. **5**: 268. 1887.

Pileus convex, rarely subumbonate, gregarious, 8–12 mm. broad; surface grayish-brown, margin striatulate: lamellae broad, uncinate, white, with a decurrent tooth: spores 6 × 5 μ: stipe smooth, glabrous, subconcolorous, hollow, white-villous at the base, 2.5–4 cm. long, 10 mm. thick.

TYPE LOCALITY: Center, New York.
HABITAT: Under pine trees.
DISTRIBUTION: New Hampshire and New York.
ILLUSTRATIONS: Ann. Rep. N. Y. State Cab. **23**: *pl. 6, f. 8–14.*

30. **Prunulus caesius** (Peck) Murrill.

Mycena caesia Peck, Bull. Torrey Club **22**: 486. 1895.

Pileus submembranous, campanulate, 8–12 mm. broad; surface glabrous, grayish-brown, blackish at the center, margin striate: lamellae subventricose, thin, grayish or bluish-gray when dry: spores subellipsoid, slightly apiculate at one end, 7.5–10 × 4–5 μ: stipe slender, glabrous, grayish-brown, hollow, 2.5–5 cm. long, 1–2 mm. thick.

TYPE LOCALITY: Newfoundland.
HABITAT: Among sphagnum.
DISTRIBUTION: Known only from the type locality.

31. **Prunulus capillaripes** (Peck) Murrill.

Mycena capillaripes Peck, Ann. Rep. N. Y. State Mus. 41: 63. 1888.

Pileus membranous, campanulate, 12 mm. broad; surface glabrous, hygrophanous, livid-gray or brownish when moist, paler when dry, margin striate when moist: context having a weak alkaline odor; lamellae adnate, ascending, subdistant, white or livid-white, dark-brownish-purple on the margin: spores narrowly ellipsoid, 7.5 × 4 μ: stipe slender, subcapillary, fragile, glabrous, concolorous, hollow, 3.5–6.5 cm. long, 1 mm. thick.

TYPE LOCALITY: Karner, New York.
HABITAT: Under pine trees.
DISTRIBUTION: Known only from the type locality.

32. **Prunulus corticalis** (Bull.) Murrill.

? *Agaricus clavularis* Batsch, Elench. Fung. Contin. 1: 89. 1786.
Agaricus corticalis Bull. Herb. Fr. *pl. 519, f. 1.* 1790.
Agaricus corticola Pers. Syn. Fung. 394. 1801.
Mycena corticola Quél. Champ. Jura Vosg. 75. 1872.

Pileus thin, hemispheric, slightly umbilicate, 2–6 mm. broad; surface reddish-brown, bluish, or cinereous, floccose-pruinose, margin sulcate-striate: lamellae adnate, uncinate, broad, subovate, pallid: spores sphaeroid, 9–10 μ: stipe thin, short, incurved, furfuraceous, 1–2 mm. long.

TYPE LOCALITY: France.
HABITAT: On bark among moss and lichens.
DISTRIBUTION: Maine to Louisiana and west to Michigan.
ILLUSTRATIONS: Bull. Herb. Fr. *pl. 519, f. 1;* Cooke, Brit. Fungi *pl. 164 (250) A;* Fries, Ic. Myc. *pl. 85, f. 2.*
EXSICCATI: Ellis & Ev. N. Am. Fungi *2007.*

33. **Prunulus brevipes** Murrill, sp. nov.

Pileus conic to convex, not umbonate, solitary, 8 mm. broad; surface dry, glabrous, pale-gray, striate, margin pallid, entire, appressed when young: lamellae adnexed or nearly free, crowded, narrow, broader near the margin, white: stipe very short for the genus, slightly tapering downward, smooth, dry, glabrous, white, attached to the substratum by a broad, circular mat of white mycelium, scarcely 1 cm. long, 1–2 mm. thick.

Type collected on a fallen dead hardwood stick at Unaka Springs, Tennessee, August 18–24, 1904, *W. A. Murrill 713* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

34. **Prunulus subfumosus** Murrill, sp. nov.

Pileus convex to subexpanded, thin, scarcely umbonate, scattered, 6–10 mm. broad; surface minutely silky to subglabrous, striate, dry, pale-fumosous, margin concolorous, slightly crenate: lamellae adnate, rather broad, subdistant, white: stipe filiform, pruinose to glabrous, subconcolorous below, white above, 4–5 cm. long, 0.5 mm. thick.

Type collected on fallen dead wood in a wet thicket at New Orleans, Louisiana, September 8, 1908, *F. S. Earle 126* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

35. **Prunulus intertextus** (Berk. & Curt.) Murrill.

Agaricus (Mycena) intertextus Berk. & Curt. Ann. Mag. Nat. Hist. III. 4: 286. 1859.
Mycena intertexta Sacc. Syll. Fung. 14: 83. 1899.

Pileus hemispheric, umbonate, becoming expanded, densely cespitose, 6–15 mm. broad; surface fusco-cinereous, the margin paler, striate: lamellae adnate, distant, thick, white: stipe glabrous, fuscous above, paler below, fistulose, villous-connate, 5 cm. long, 1–1.5 mm. thick.

TYPE LOCALITY: Carolina.
HABITAT: On *Pinus.*
DISTRIBUTION: Known only from the type locality.

36. **Prunulus avellaneus** Murrill, sp. nov.

Pileus campanulate to convex, not umbonate, densely cespitose, 1–1.5 cm. broad; surface smooth, dry, glabrous, striate, avellaneous: lamellae adnate, distant, broad, white, ventricose in front, notched on the edges: spores broadly ellipsoid, smooth, hyaline, 7–8.5 × 6–7 μ: stipe tough, hollow, smooth, glabrous, avellaneous, paler at the apex, equal or slightly enlarged toward the base, 3 cm. long, 2 mm. thick.

Type collected on a dead balsam fir log in woods at Lake Placid, Adirondack Mountains, New York, July 17–29, 1912, *W. A. & Edna L. Murrill 86* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

37. **Prunulus curvipes** (Peck) Murrill.

Omphalia curvipes Peck, Bull. Torrey Club **34**: 345. 1907.

Pileus submembranous, convex, umbilicate, cespitose, 6–10 mm. broad; surface glabrous, moist, brown, grayish-brown, or dark-gray, sometimes paler at the center when dry, margin sometimes obscurely striate, incurved: lamellae thin, rather crowded, arcuate, adnate or slightly decurrent, white or whitish: spores minute, 4 × 2 μ: stipe short, curved, stuffed or hollow, white or whitish, slightly thickened and distinctly whitish-villose at the base, 1.5–2.5 cm. long, 1–2 mm. thick.

TYPE LOCALITY: Ontario, Canada.
HABITAT: On decaying wood of maple and certain other trees.
DISTRIBUTION: Eastern Canada and New York.

38. **Prunulus atribrunneus** Murrill, sp. nov.

Pileus campanulate to convex, subumbonate, gregarious, 1–1.5 cm. broad; surface dry, glabrous, dark-brown, margin subconcolorous, entire, not striate: lamellae adnexed, nearly free, crowded, rather broad near the margin, undulate on the edges, white: spores subglobose, smooth, hyaline, 5–6 μ: stipe cylindric, filiform, dry, smooth, glabrous, white, hollow, 3–4 cm. long, 1 mm. thick.

Type collected on an old stump in the New York Botanical Garden, July 6, 1902, *F. S. Earle 196* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

39. **Prunulus hemisphaericus** (Peck) Murrill.

Mycena hemisphaerica Peck, Ann. Rep. N. Y. State Mus. **46**: 104 (24). 1893.

Pileus thin, firm, hemispheric, gregarious or subcespitose, 1–1.5 cm. broad; surface glabrous, hygrophanous, brown when moist, gray when dry, margin striatulate when moist: lamellae adnate, subdistant, arcuate, whitish-livid: spores ellipsoid, 4–5 × 3 μ: stipe glabrous, livid-white, hollow, 2.5–3 cm. long, 2–2.5 mm. thick.

TYPE LOCALITY: Fulton Chain, New York.
HABITAT: On mossy prostrate trunks of trees in woods.
DISTRIBUTION: New York.

40. **Prunulus vexans** (Peck) Murrill.

Mycena vexans Peck, Ann. Rep. N. Y. State Mus. **38**: 85. 1885.

Pileus conic-campanulate or convex, membranous, solitary or gregarious, not cespitose, 1–1.5 cm. broad; surface subpruinose, blackish-brown, margin distantly striate: lamellae slightly interveined, adnate or uncinate-adnate, subdistant, ascending, white, becoming gray, paler on the edges: spores 7.5–8 × 5–6.5 μ: stipe slender, tough, glabrous, concolorous, hollow, often floccose-villose at the base, 5–6.5 cm. long, 2.5 mm. thick.

TYPE LOCALITY: Adirondack Mountains, New York.
HABITAT: On the ground in woods.
DISTRIBUTION: Known only from the type locality.

41. **Prunulus atroalboides** (Peck) Murrill.

Agaricus (*Mycena*) *atroalboides* Peck, Ann. Rep. N. Y. State Mus. **27**: 93. 1875.
Mycena atroalboides Sacc. Syll. Fung. **5**: 276. 1887.

Pileus campanulate, obtuse or subumbonate, 8–12 mm. broad; surface at first blackish-brown with a slight pruinosity, then fading to cinereous on the margin, which is striate: lamellae

crowded, narrow, ascending, uncinate with a decurrent tooth, white or cinereous: spores apiculate-ellipsoid, about 8 μ: stipe long, equal, glabrous, concolorous, darker toward the apex when young, villose at the base, 8–10 cm. long, 1–2 mm. thick.

TYPE LOCALITY: Forestburgh, New York.
HABITAT: Wet places among mosses in woods.
DISTRIBUTION: New York.

42. **Prunulus praelongus** (Peck) Murrill.

Agaricus praelongus Peck, Ann. Rep. N. Y. State Cab. **23**: 81. 1872.
Mycena praelonga Sacc. Syll. Fung. **5**: 282. 1887.

Pileus cylindric to conic-campanulate, gregarious, 8–15 mm. broad; surface blackish-brown or lead-colored, becoming paler in drying, margin striate when moist: lamellae uncinate, with a decurrent tooth, narrow, white: stipe glabrous, very long, firm, paler than the pileus, often reddish, hollow, villose at the base, 13–18 cm. long.

TYPE LOCALITY: Sandlake, New York.
HABITAT: In sphagnous marshes.
DISTRIBUTION: New York.

43. **Prunulus clavicularis** (Fries) Murrill.

Agaricus clavicularis Fries, Syst. Myc. **1**: 158. 1821.
Mycena clavicularis P. Karst. Bidr. Finl. Nat. Folk **32**: 119. 1879.

Pileus membranous, convex-expanded, at first subumbonate and then depressed on the disk, 1–3 cm. broad; surface whitish, flavid, or fuscous, dry, epelliculose, margin striate: lamellae often interveined, adnate or subdecurrent, white: stipe tough, glabrous, viscid, whitish, fibrillose at the base, 2.5 cm. long.

TYPE LOCALITY: Sweden.
HABITAT: In rather moist pine woods.
DISTRIBUTION: New York and Massachusetts; also in Europe.
ILLUSTRATION: Fries, Ic. Myc. *pl. 84, f. 1.*
EXSICCATI: Roum. Fungi Gall. *3203;* Roum. Fungi Sel. *4801.*

44. **Prunulus acutoconicus** (Clements) Murrill.

Mycena acutoconica Clements, Bot. Surv. Neb. **2**: 38. 1893.

Pileus submembranous, persistently conic, acute, 2.5–3 cm. broad; surface light-yellow, viscid, smooth: lamellae free, linear, ochraceous when dry: spores oblong-ellipsoid, 12 × 7–8 μ: stipe long, equal, smooth, yellowish-brown, 6–7 cm. long.

TYPE LOCALITY: Squaw Cañon, Nebraska.
HABITAT: In sand.
DISTRIBUTION: Known only from the type locality.

45. **Prunulus ludovicianus** Murrill, sp. nov.

Pileus fleshy, firm, convex to expanded, gibbous, solitary, 3 cm. broad; surface moist, glabrous, scarcely striate, dark-tan or nearly fuscous: lamellae free or nearly so, crowded, of medium breadth, whitish: spores subglobose, smooth, hyaline, 6–7 μ: stipe cylindric, equal, glabrous, pallid, shining, solid, 5 cm. long, 5 mm. thick.

Type collected on the ground in a wet thicket at New Orleans, Louisiana, September 8, 1908, *F. S. Earle 132* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

46. **Prunulus splendidipes** (Peck) Murrill.

Mycena splendidipes Peck, Bull. N. Y. State Mus. 167: 28. 1913.

Pileus thin, submembranous, ovoid when young, subcampanulate or convex with age, 10–20 mm. broad; surface glabrous, striate, viscid, brown at the center and yellow near the margin when young, becoming grayish-green, greenish-brown, or brown with age; margin persistently appressed and constricted, pallid: context having a strong odor and disagreeable taste, poisonous; lamellae subdistant, rather narrow, adnate, white or whitish: spores broadly

ellipsoid or subglobose, 6–8 × 4–6 μ: stipe long or short, straight or flexuous, hollow, glabrous, viscid, bright-lemon-yellow, 5–30 cm. long, 2–4 mm. thick.

TYPE LOCALITY: Richmond County, New York.
HABITAT: On decaying pine leaves.
DISTRIBUTION: Known only from the type locality.
ILLUSTRATION: Bull. N. Y. State Mus. 167: *pl. 10*.

47. **Prunulus alcaliniformis** Murrill, sp. nov.

Pileus conic to broadly convex, the umbo becoming inconspicuous with age, gregarious, very abundant, 1–2 cm. broad; surface dry, glabrous, fumoso-avellaneous, the umbo slightly darker at times, radiate-striate over the lamellae, margin concolorous, appressed when young: context thin, white, with sweetish taste and pleasant odor; lamellae adnate, breaking away from the stipe with age, broad, slightly ventricose, distant, several times inserted, white, with an ashy tint: spores ellipsoid, pointed at one end, smooth, hyaline, 8–9 × 5 μ: stipe long, slender, equal, dry, glabrous, avellaneous, whitish at the apex, mycelioid at the base, hollow, cartilaginous, 5–7 cm. long, about 2 mm. thick.

Type collected among twigs and needles under a Norway spruce in woods in the New York Botanical Garden, June 14, 1911, *W. A. Murrill* (herb. N. Y. Bot. Gard.).
HABITAT: On and about dead coniferous wood and needles.
DISTRIBUTION: Massachusetts, New York, and Alabama.
ILLUSTRATION: Mycologia 4: *pl. 68, f. 9* (as *Mycena vexans*).

48. **Prunulus scabripes** Murrill, sp. nov.

Pileus campanulate, not umbonate, solitary or gregarious, 2 cm. broad; surface dry, glabrous, avellaneous, shining, slightly striate, margin entire, concolorous: lamellae nearly free, arcuate, subdistant, rather broad near the margin, ashy-white: spores oblong-ellipsoid, smooth, hyaline, densely granular, 8–9 × 4–5 μ: stipe cylindric, equal, hollow, cartilaginous, avellaneous, minutely and densely scabrous, especially at the apex, 7 cm. long, 2–3 mm. thick.

Type collected among grass by the roadside in thin woods at Lake Placid, Adirondack Mountains, New York, October 3–14, 1912, *W. A. & Edna L. Murrill 864* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

49. **Prunulus paluster** (Peck) Murrill.

Agaricus paluster Peck, Ann. Rep. N. Y. State Cab. **23**: 82. 1872.
Mycena palustris Sacc. Syll. Fung. **5**: 282. 1887.

Pileus convex to expanded, with a small, acute umbo, 1–2 cm. broad; surface grayish-brown, whitish-gray in drying and apparently covered with numerous whitish fibrils, margin striatulate: lamellae not uncinate, subfree, broad, subventricose, sordid-white: stipe thin, equal or slightly attenuate upward, glabrous, pallid, hollow, villose at the base, 8–10 cm. long.

TYPE LOCALITY: Sandlake, New York.
HABITAT: Among sphagnum in a cranberry marsh.
DISTRIBUTION: New York and New Jersey.
ILLUSTRATIONS: Ann. Rep. N. Y. State Mus. **23**: *pl. 5, f. 6–11*.

50. **Prunulus cymbaliferus** (Mont.) Murrill.

Agaricus (*Mycena*) *cymbaliferus* Mont. Syll. Crypt. 110. 1856.
Mycena cymbalifera Sacc. Syll. Fung. **5**: 273. 1887.

Pileus membranous, convex to expanded, amply umbonate, 1.5–2.5 cm. broad; surface white to gray, becoming brown when dry, margin undulate, expanded, striatulate: lamellae once inserted, scarcely attached, white, linear, the ends attenuate: stipe very long, fragile, fibrillose, hollow, the base decurrent, fusiform, radicate, 15 cm. long, 2 mm. thick.

TYPE LOCALITY: Columbus, Ohio.
HABITAT: On the ground among leaves.
DISTRIBUTION: Known only from the type locality.

51. **Prunulus murinus** Murrill, sp. nov.

Pileus conic, not fully expanding, thin, scattered, 1.5–2 cm. broad; surface dry, glabrous, radiate-striate, murinous, slightly paler on the margin: lamellae adnate, of medium distance, narrow, whitish or grayish to pale-umbrinous, the edges entire, concolorous: spores broadly

ellipsoid or ovoid, smooth, hyaline, copious, 8–9 × 6 μ: stipe slender, equal, smooth, glabrous, polished, hollow, subconcolorous, blackish and tomentose at the base, 3–5 cm. long, 1–2 mm. thick.

Type collected in leaf-mold under spruce trees at Lake Placid, Adirondack Mountains, New York, October 3–14, 1912, *W. A. & Edna L. Murrill 801* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Adironack Mountains, New York.

52. **Prunulus denticulatus** (Bolt.) S. F. Gray, Nat. Arr. Brit. Pl. 1: 630. 1821.

Agaricus denticulatus Bolt. Hist. Fung. 1: 4. 1788.
Agaricus pelianthinus Fries, Syst. Myc. 1: 112. 1821.
Mycena denticulata Quél. Fl. Myc. 223. 1888.

Pileus subfleshy, convex-expanded, obtuse, 2.5–6 cm. broad; surface moist, hygrophanous, livid-purple, margin striate: lamellae elegantly reticulate-connected, emarginate-adnexed, blackish-violet, black and dentate on the edges: spores ellipsoid, smooth, hyaline, 5–7 × 3–4 μ: cystidia containing violet-colored sap: stipe firm, equal, fibrillate-striate at the apex, paler than the pileus, 6–8 cm. long, 3–5 mm. thick.

TYPE LOCALITY: Halifax, England.
HABITAT: On the ground in woods.
DISTRIBUTION: Northern New York; also in Europe.
ILLUSTRATIONS: Bolt. Hist. Fung. 1: *pl. 4;* Boud. Ic. Myc. 1: *pl. 67.*

53. **Prunulus purus** (Pers.) Murrill.

Agaricus purus Pers. Tent. Disp. Fung. 21. 1797.
Mycena pura Quél. Champ. Jura Vosg. 68. 1872.

Pileus fleshy, thin, campanulate or convex to expanded, obtusely umbonate when young, 2–5 cm. broad; surface smooth, glabrous, of uniform color, varying from rose to rose-purple, violet, or lilac, margin striate, upturned with age: lamellae rather broad, adnate to sinuate, sometimes wavy and crenate on the edges, venose-connected, varying from white to shades of rose or violet, sometimes white on the edges: spores oblong, hyaline, 7–9 × 3–3.5 μ; cystidia subcylindric, 30–40 × 13–15 μ: stipe firm, smooth, subglabrous, concolorous, hollow, somewhat villose at the base, 5–8 cm. long, 2–4 mm. thick.

TYPE LOCALITY: Europe.
HABITAT: On the ground in woods.
DISTRIBUTION: Throughout temperate North America and at Jalapa, Mexico; also in Europe.
ILLUSTRATIONS: Bull. Herb. Fr. *pl. 507;* Hussey, Ill. Brit. Myc. 2: *pl. 49;* Mycologia 7: *pl. 158, f. 3;* Sow. Engl. Fungi *pl. 72.*

54. **Prunulus adirondackensis** Murrill, sp. nov.

Pileus convex, not fully expanding, umbonate, especially when young, 2–3 cm. broad; surface dry, glabrous, striate-sulcate, white with a pale-avellaneous tint, margin very thin, white, splitting with age: lamellae adnate with a decurrent tooth, rather narrow, crowded, white: spores broadly ellipsoid, smooth, hyaline, 7–8.5 × 6–7 μ: stipe cylindric, equal, hollow, slightly darker than the pileus, especially below, smooth, glabrous, polished, whitish-mycelioid and often long-radicate below, 4–10 cm. long, 2–3 mm. thick.

Type collected on a dead maple log at Lake Placid, Adirondack Mountains, New York, July 17–29, 1912, *W. A. & Edna L. Murrill 8* (herb. N. Y. Bot. Gard.).
HABITAT: On dead deciduous and coniferous logs in woods.
DISTRIBUTION: Adirondack Mountains, New York.

55. **Prunulus niveipes** Murrill, sp. nov.

Pileus conic to campanulate, not fully expanding, neither umbonate nor depressed, gregarious, 2 cm. broad; surface moist, glabrous, striate, white with an avellaneous tint, margin white, entire: lamellae adnate, of medium breadth and distance, white: spores ovoid, smooth, hyaline, 7–9 × 5–6 μ: stipe cylindric, equal, smooth, glabrous, hollow, snow-white throughout, slightly whitish-tomentose at the base, 4 cm. long, 2.5 mm. thick.

Type collected among delicate mosses on a wet maple log at Lake Placid, Adirondack Mountains, New York, July 17–29, 1912, *W. A. & Edna L. Murrill 178* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

56. **Prunulus ochraceicinereus** Murrill, sp. nov.

Pileus thin, broadly convex, not umbonate, gregarious, 2 cm. broad; surface smooth, glabrous, shining, pale-ochraceous-cinereous, margin whitish, slightly striate: lamellae adnate with a decurrent tooth, very few inserted, broad near the margin, subdistant, pallid: spores oblong-ellipsoid, smooth, hyaline, about 7 × 4–5 μ: stipe cylindric, equal, smooth, glabrous, concolorous, nearly white at the apex, pruinose at the base, 3–4 cm. long, 2 mm. thick.

Type collected on decayed wood at Edgewater, New Jersey, September 20, 1902, *F. S. Earle & W. A. Murrill 1419* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

57. **Prunulus pectinatus** Murrill, sp. nov.

Pileus thin, conic to convex, not umbonate, becoming slightly umbilicate with age, cespitose, 2–3 cm. broad; surface dry, glabrous, striate, pallid, bay on the disk, margin very thin, white, splitting with age, the lamellae projecting and giving a scalloped effect: lamellae narrow, distant, interveined, adnate or adnexed, white: spores broadly ellipsoid, smooth, hyaline, 8–9 × 7 μ: stipe very slender, equal, smooth, glabrous, concolorous or slightly darker, especially below, 4 cm. long, 1 mm. thick.

Type collected on fallen, dead, deciduous twigs at Lake Placid, Adirondack Mountains, New York, July 17–29, 1912, *W. A. & Edna L. Murrill 202* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

58. **Prunulus ligniarius** (Peck) Murrill.

Collybia ligniaria Peck, Ann. Rep. N. Y. State Mus. 54: 145. 1901.

Pileus thin, convex to subplane, obtuse or umbonate, 1.5–2.5 cm. broad; surface whitish or isabelline, glabrous, the disk brownish, margin thin, substriate: lamellae broadly sinuate, subdistant, thin, rather narrow, ventricose, white: spores subellipsoid or subglobose, 7.5–8.7 × 6–7.5 μ: stipe glabrous, whitish or pallid, very rigid, equal, hollow, 2.5–5 cm. long, 2 mm. thick.

TYPE LOCALITY: North Elba, New York.
HABITAT: On dead deciduous wood.
DISTRIBUTION: New York and Massachusetts.

59. **Prunulus Leaianus** (Berk.) Murrill.

Agaricus (Mycena) Leaianus Berk. Lond. Jour. Bot. 4: 300. 1845.
Collybia Leaiana Fairman, Proc. Rochester Acad. Sci. 2: 155. 1892.

Pileus thin, convex, umbilicate, cespitose, 1–2 cm. or more broad; surface luteous to miniatous, minutely red-virgate, margin striate: lamellae sinuate-adnexed, distant, ventricose, orange, scarlet on the edges: spores oblong-ellipsoid, smooth, 7–9 × 4–5 μ: stipe long, viscid, strigose-tomentose below, orange, 6 cm. long, 2 mm. thick.

TYPE LOCALITY: Cincinnati, Ohio.
HABITAT: On dead logs.
DISTRIBUTION: Maine to North Carolina and west to Michigan and Ohio.
ILLUSTRATION: Bull. Conn. Geol. Hist. Surv. 15: *pl. 11*.
EXSICCATI: Shear, N. Y. Fungi *8*.

60. **Prunulus purpureofuscus** (Peck) Murrill.

Agaricus (Mycena) purpureofuscus Peck, Ann. Rep. N. Y. State Mus. 38: 85. 1885.
Mycena purpureofusca Sacc. Syll. Fung. 5: 255. 1887.

Pileus membranous, campanulate or convex, obtuse, 1–2.5 cm. broad; surface glabrous, purplish-brown to lilac-brown, margin striate: lamellae ascending, adnate, subdistant, lanceolate, white, purplish-brown on the edges: spores subglobose, 6–7.5 × 6 μ: stipe slender, glabrous, concolorous or paler, hollow, white-pilose at the base, 2.5–7.5 cm. long, 2 mm. thick.

TYPE LOCALITY: Caroga, New York.
HABITAT: Dead trunks of coniferous trees in woods.
DISTRIBUTION: Mountains of New York and Virginia.

61. **Prunulus rugosoides** (Peck) Murrill.

Mycena rugosoides Peck, Bull. N. Y. State Mus. **67**: 22. 1903.

Pileus fleshy but thin, campanulate, usually broadly umbonate, gregarious, 12–24 mm. broad; surface glabrous, hygrophanous, white, cinereous, or blackish-brown, paler when dry, margin striate and even when moist, uneven with irregular radiating rugae when dry: lamellae adnexed, rounded behind, subdistant, whitish or smoky-white: spores ellipsoid, 7.5 × 5 μ: stipe long, radicate, even, glabrous, white or pallid, often tinged with reddish-brown below, hollow, the base villose-tomentose, 4–8 cm. long, 1–3 mm. thick.

TYPE LOCALITY: North Elba, New York.
HABITAT: On mossy, rotten, coniferous logs.
DISTRIBUTION: Known only from the type locality.
ILLUSTRATIONS: Ann. Rep. N. Y. State Mus. **67**: *pl. M, f. 17–34.*

62. **Prunulus rutilantiformis** Murrill.

Mycena denticulata Peck, Bull. Torrey Club **32**: 77. 1905. Not *Prunulus denticulatus* S. F. Gray, 1821.

Pileus thin, subcampanulate or convex, obtuse, 12–20 mm. broad; surface glabrous, the cuticle separable, gray tinged with brown: lamellae decurrent with a tooth, subdistant, rather broad, denticulate, pale-brown, purplish on the edges: spores ellipsoid, 7–8 × 4–5 μ: stipe slender, straight, equal, glabrous, whitish or yellowish, hollow, 5–7 cm. long, 1–2 mm. thick.

TYPE LOCALITY: St. Louis, Missouri.
DISTRIBUTION: Known only from the type locality.

63. **Prunulus tenuiculus** Murrill, sp. nov.

Pileus broadly campanulate, not umbonate, very thin, gregarious to subcespitose, 1–2 cm. broad; surface subglabrous, not shining, gray, slightly rosy-isabelline on the disk, margin concolorous, entire, deeply striate: lamellae adnate, distant, arcuate, pale-whitish: spores broadly ellipsoid, smooth, hyaline, 7–8 × 5–6 μ: stipe slender, equal, glabrous, pale-fuscous, whitish and pruinose at the apex, 3–4 cm. long, 1 mm. thick.

Type collected on a fallen, dead, deciduous branch at Redding, Connecticut, July 24, 1902, *L. M. Underwood & F. S. Earle 692* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

64. **Prunulus subtenuipes** Murrill, sp. nov.

Pileus thin, convex to subexpanded, slightly umbonate, cespitose, 1.5–2 cm. broad; surface dry, glabrous, striate, fuliginous when young, avellaneous at maturity, the umbo remaining fuliginous, margin entire, pallid: lamellae adnate, rather broad, distant, grayish-white: spores ellipsoid, smooth, hyaline, 7–8 × 4–5 μ: stipe very slender, cylindric, equal, concolorous, smooth, glabrous, whitish-mycelioid at the base, 4 cm. long, 1–2 mm. thick.

Type collected on dead coniferous wood on the north shore of Sebec Lake, Piscataquis County, Maine, September 16, 17, 1905, *W. A. Murrill 2600* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

65. **Prunulus atridiscus** Murrill, sp. nov.

Pileus broadly convex, solitary, 2 cm. broad; surface dry, cinereous, darker on the disk, the pellicle of compacted fibrils which split radially; margin whitish, eroded with age: lamellae broadly sinuate, rather distant, narrow behind, broad and ventricose in front, whitish: spores ellipsoid, smooth, hyaline, 6–7 × 4–5 μ: stipe cylindric, smooth, glabrous, concolorous, hollow, white and pruinose at the apex, 5–6 cm. long, 1–2 mm. thick.

Type collected on decayed wood at Edgewater, New Jersey, September 20, 1902, *F. S. Earle & W. A. Murrill 1418* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

66. **Prunulus semivestipes** (Peck) Murrill.

Omphalia semivestipes Peck, Bull. Torrey Club **22**: 200. 1895.

Pileus very thin, convex or subcampanulate, 1.5–2.5 cm. broad; surface glabrous, grayish-brown when dry, paler when fresh: lamellae arcuate, adnate or slightly decurrent, distant,

rather broad, white or whitish: spores ellipsoid, 5–6 × 3–4 μ: stipe white or whitish, hollow, glabrous above, clothed with white mycelioid tomentum at the base, 2.5 cm. long, 2–4 mm. thick.

TYPE LOCALITY: Newfoundland.
HABITAT: On much decayed wood.
DISTRIBUTION: Known only from the type locality.

67. **Prunulus epipterygius** (Scop.) Murrill.

Agaricus epipterygius Scop. Fl. Carn. ed. 2. 2: 455. 1772.
Mycena epipterygia Quél. Champ. Jura Vosg. 73. 1872.

Pileus membranous, campanulate to expanded, subobtuse, solitary or cespitose, 1–3 cm. broad; surface variable, cinereous or rufescent, the pellicle viscid, margin striate: lamellae adnate with a decurrent tooth, thin, versicolored, whitish, cinereous, bluish-gray, etc.: spores ellipsoid, 8–10 × 4–5 μ: stipe elongate, tough, radicate, viscid, glabrous, fibrillose at the base, yellowish or cinereous, fistulose, 5–11 cm. long, 2–3 mm. thick.

TYPE LOCALITY: Carniola, Austria.
HABITAT: On moss on logs.
DISTRIBUTION: Eastern temperate North America; also in Europe.
ILLUSTRATIONS: Atk. Stud. Am. Fungi *f. 96;* Cooke, Brit. Fungi *pl. 208 (245) A;* Sow. Engl. Fungi *pl. 92.*

68. **Prunulus fuliginosus** Murrill, sp. nov.

Pileus rather firm, conic to campanulate, umbonate, densely cespitose, 2–3 cm. broad; surface smooth, glabrous, moist, hygrophanous, blackish when young, becoming fuliginous and at length paler with age, the disk remaining fuliginous, striate on the margin: lamellae adnexed, rather broad, subcrowded, grayish-white: spores ellipsoid, smooth, hyaline, 6–7 × 3.5–4.5 μ: stipe cylindric, smooth, glabrous, paler than the pileus, hollow, whitish-mycelioid at the base, about 6 cm. long, 2–4 mm. thick.

Type collected on a decayed balsam stump at Stockbridge, Massachusetts, September 3, 4, 1911, *W. A. Murrill & W. Gilman Thompson* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

69. **Prunulus collybiiformis** Murrill, sp. nov.

Pileus thin, rather tough, convex to expanded and at length umbilicate or depressed, cespitose, 2–4 cm. broad; surface dry, glabrous, cinereous, darker and rugose on the disk; margin entire, pallid, becoming slightly striate with age or on drying: lamellae adnate, plane, white, distant, rather narrow, interveined: spores ellipsoid, smooth, hyaline, 6–7 × 4–5 μ: stipe cylindric, somewhat enlarged at the base, hollow, smooth, pallid, subglabrous, whitish-mycelioid at the base, 3–5 cm. long, 2–5 mm. thick.

Type collected on an oak stump at Port Jefferson, Long Island, New York, August 5, 1902, *C. H. Peck & F. S. Earle 839* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Long Island, New York; Louisiana.

70. **Prunulus atroumbonatus** (Peck) Murrill.

Mycena atroumbonata Peck, Bull. N. Y. State Mus. 157: 29. 1912.

Pileus submembranous, convex, becoming broadly convex or nearly plane, umbonate, gregarious, 1.2–3.2 cm. broad; surface glabrous, dark-watery-brown and shining when moist, grayish-brown with a black umbo when dry, striate-plicate from the margin half way to the umbo: lamellae thin, moderately crowded, widely sinuate at the inner extremity, decurrent with a tooth, white when young, whitish or livid-white when mature: spores oblong or ellipsoid, granular within, often 2-nucleate, 6–9 × 5–6 μ: stipe slender, rather long, glabrous, hollow, radicate, colored like the pileus, with a white villosity at the base, 5–8 cm. long, 1–2 mm. thick.

TYPE LOCALITY: North River, New York.
HABITAT: On decaying coniferous trunks, especially of hemlock.
DISTRIBUTION: Maine and New York.

71. **Prunulus galericulatus** (Scop.) Murrill.

Agaricus galericulatus Scop. Fl. Carn. ed. 2. 2: 455. 1772.
Mycena galericulata Quél. Champ. Jura Vosg. 70. 1872.

Pileus submembranous, conic-campanulate to expanded, cespitose, 2–6 cm. broad; surface pale-grayish to grayish-brown, dry, glabrous; margin striate to the umbo; lamellae interveined, adnate with a decurrent tooth, white or flesh-colored: spores sphaeroid, hyaline, 8–10 × 4–6 μ: stipe rigid, smooth, polished, glabrous, tomentose at the base, white, yellowish, or brownish, the base fusiform, radicate, 5–10 cm. long.

TYPE LOCALITY: Carniola, Austria.
HABITAT: On logs.
DISTRIBUTION: Greenland to North Carolina and west to Iowa and Kansas.
ILLUSTRATIONS: Bull. Herb. Fr. *pl. 518, f. d;* Cooke, Brit. Fungi *pl. 222 (227), pl. 223 (228) A;* Schaeff. Fung. Bavar. *pl. 52.*

72. **Prunulus leucophaeus** Murrill, sp. nov.

Pileus conic to campanulate, not expanding, not umbonate, becoming umbilicate on the disk on drying, gregarious, 5–8 mm. broad; surface slightly viscid when moist, glabrous, snow-white, striate to the disk, margin entire, concolorous: lamellae adnate with a decurrent tooth, subcrowded, rather narrow, snow-white: stipe filiform, smooth, glabrous, slightly viscid when moist, finely pruinose at the apex, snow-white, 3 cm. long, less than 1 mm. thick.

Type collected among dead needles and sticks in a coniferous forest at Seattle, Washington, October 20–November 1, 1911, *W. A. Murrill 384* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

73. **Prunulus paludicola** Murrill, sp. nov.

Pileus thin and delicate, conic to campanulate, gregarious, reaching 1 cm. broad; surface glabrous, striate, white with a pale-avellaneous tint, slightly viscid when moist, margin white, appressed when young: lamellae adnate, distant, narrow, white: spores ellipsoid, slightly pointed at one end, smooth, hyaline, 9–11 × 5–6 μ: stipe very long and slender, smooth, glabrous, slightly viscid when moist, white at the apex, citrinous at the base, 6–10 cm. long, 1 mm. thick.

Type collected in a peat bog near Seattle, Washington, October 20–November 1, 1911, *W. A. Murrill 370* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

74. **Prunulus flavicitrinus** Murrill, sp. nov.

Pileus conic, not expanding, solitary, 8 mm. broad and high; surface smooth, glabrous, striate, flavous, with a luteous tint on the disk, margin entire, concolorous, appressed when young: lamellae rather broad, subcrowded, citrinous: spores oblong-ellipsoid, smooth, hyaline, 12–14 × 5–6 μ: stipe filiform, tough, subglabrous, citrinous at the apex, umbrinous at the base, 3 cm. long, 1 mm. thick.

Type collected on dead wood in woods near Seattle, Washington, October 20–November 1, 1911, *W. A. Murrill 377* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

75. **Prunulus aurantiidiscus** Murrill, sp. nov.

Pileus conic to campanulate, not expanding, umbonate, gregarious, 7 mm. broad; surface moist, glabrous, citrinous, striate to the rounded umbo, margin entire, concolorous: lamellae adnate or adnexed, subdistant, narrow, whitish, hyaline: stipe filiform, smooth, moist, glabrous, whitish, hyaline, becoming yellowish on drying, 2–3 cm. long, less than 1 mm. thick.

Type collected on the ground among mosses and humus in a coniferous forest at Mill City, Oregon, November 9, 1911, *W. A. Murrill 825* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

76. **Prunulus aurantiacus** Murrill, sp. nov.

Pileus conic to campanulate, not expanding, umbonate, scattered, 8 mm. broad; surface smooth, moist, glabrous, orange, not changing color on drying, margin entire, concolorous,

striate: lamellae adnexed, subdistant, rather narrow, white: stipe equal, smooth, glabrous, polished, orange, changing to luteous on drying, hollow, 1.5 cm. long, 2 mm. thick.

Type collected on the ground among decaying needles in a virgin coniferous forest at Mill City, Oregon, November 9, 1911, *W. A. Murrill 862* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

77. **Prunulus strobilinoides** (Peck) Murrill.

Mycena strobilinoides Peck, Ann. Rep. N. Y. State Mus. **45**: 23. 1893.

Pileus thin, subcampanulate, obtuse, 8–10 mm. broad; surface glabrous, bright-scarlet: lamellae white, reddish on the edges: stipe short, glabrous, paler than the pileus, brown-villous at the base, 2.5 cm. long.

TYPE LOCALITY: Olympia Mountain, Washington.
HABITAT: Under *Abies subalpina*.
DISTRIBUTION: Known only from the type locality.

78. **Prunulus fusipes** Murrill, sp. nov.

Pileus conic to convex, becoming nearly expanded, solitary or gregarious, about 1 cm. broad; surface moist, glabrous, striate, miniatous or incarnate, the margin paler, entire, appressed when young: lamellae nearly free, crowded, inserted, ventricose, white with a yellowish tint: spores ellipsoid, smooth, hyaline, 7–8 × 4–5 μ: stipe unusually large at the center and tapering at both ends, smooth, glabrous, translucent, pale-yellow, 6 cm. long, 2–3 mm. thick.

Type collected on the ground, probably on dead wood, in woods near Seattle, Washington, October 20–November 1, 1911, *W. A. Murrill 468* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

79. **Prunulus elegantulus** (Peck) Murrill.

Mycena elegantula Peck, Bull. Torrey Club **22**: 199. 1895.

Pileus membranous, conic or campanulate, gregarious or cespitose, 1–3 cm. broad; surface brown or purplish-brown, margin sulcate-striate: lamellae interveined, adnate with a decurrent tooth, distant, whitish or pallid, the edges purplish-brown: spores oblong-ellipsoid, 8–12 × 3.5–5 μ: stipe slender, glabrous or gray-fibrillose at the base, hollow, 2.5–5 cm. long, 1 mm. thick.

TYPE LOCALITY: Pasadena, California.
HABITAT: Among fallen leaves and rarely on dead wood.
DISTRIBUTION: Washington, Oregon, and California.

80. **Prunulus caesiialbus** Murrill, sp. nov.

Pileus thin, conic to campanulate, gregarious, 1.5 cm. broad; surface dry, smooth, glabrous, caesious with an aerugineous tint, faded and much wrinkled on drying: lamellae adnate to the enlarged apex of the stipe, narrow, subcrowded, arcuate, white: spores subglobose, slightly roughened, densely granular, 7–8 μ long: stipe long and slender, pruinose to glabrous, white or avellaneous at the apex, tomentose and aerugineous at the base, 6 cm. long, 1–2 mm. thick.

Type collected among dead leaves in Preston's Ravine, near Palo Alto, California, November 25, 1911, *W. A. Murrill & L. R. Abrams 1208* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

81. **Prunulus occidentalis** Murrill, sp. nov.

Pileus convex, not fully expanding, not umbonate, sometimes slightly umbilicate with age, or at least on drying, densely cespitose, abundant, reaching 2 cm. broad; surface smooth, dry or moist, glabrous, fumosous-avellaneous, darker when young, margin entire, concolorous, striate: lamellae adnate to the enlarged apex of the stipe, rather distant, inserted, narrow behind, white to gray, fumosous-avellaneous on drying: spores ellipsoid, slightly pointed at one end, smooth, hyaline, 7–8 × 4–5 μ: stipe equal or slightly tapering upward, polished, smooth, glabrous, hollow, whitish-mycelioid at the base, 3–6 cm. long, 2–4 mm. thick.

Type collected on a dead coniferous log at Mill City, Oregon, November 9, 1911, *W. A. Murrill 879* (herb. N. Y. Bot. Gard.).

HABITAT: Dead coniferous logs.
DISTRIBUTION: Washington, Oregon, and California.

82. **Prunulus plumbeibrunneus** Murrill, sp. nov.

Pileus convex, gregarious, 1.5–2 cm. broad; surface smooth, glabrous, opaque, pale-lead-brown, lighter near the margin, which is somewhat crenate and appressed when young: context cream-colored, without characteristic taste or odor; lamellae sinuate, rather distant, inserted, broad, ventricose, cream-colored: spores oblong-ellipsoid, smooth, hyaline, 7–9 × 4–5 μ: stipe cylindric, smooth, glabrous, concolorous with the margin of the pileus, hollow, 4–6 cm. long, 1–2 mm. thick.

Type collected among decaying pine needles at Stanford University, California, December 6, 1901, *C. F. Baker 168* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

83. **Prunulus myceliosus** Murrill, sp. nov.

Pileus rather large and firm, convex to plane, gregarious to subcespitose, reaching 2.5 cm. broad; surface dull-brownish varying to whitish, moist, glabrous, striate, margin white, entire, appressed when young: lamellae adnate or adnexed, narrow, crowded, white: spores ellipsoid, pointed, smooth, hyaline, 5 × 3 μ: stipe very long and slender, cylindric, equal, smooth, glabrous, light-brown, mycelioid at the base and arising from copious white mycelium, about 10 cm. long, 1–2 mm. thick.

Type collected in humus on the ground in a virgin forest near Seattle, Washington, October 20–November 1, 1911, *W. A. Murrill 223* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

84. **Prunulus Abramsii** Murrill, sp. nov.

Pileus rather large and firm, conic to convex, not expanding, scattered, 1–1.5 cm. broad; surface glabrous, moist, radiately striate, avellaneous, blackish-brown on the disk, margin pallid, somewhat creamy, appressed when young: context white, without characteristic odor or taste: lamellae adnate-sinuate, subdistant, about 15 in number, with short ones inserted, whitish: spores oblong-ellipsoid, slightly curved, smooth, hyaline, 11–12.5 × 5 μ: stipe cylindric or enlarged at the base, smooth, glabrous, steel-gray, often whitish at the apex, 6–8 cm. long, 1–2 mm. thick.

Type collected on the ground under oaks at Stanford University, California, November 27, 1902, *L. R. Abrams & James McMurphy 69* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

85. **Prunulus longipes** Murrill, sp. nov.

Pileus convex, umbonate, rather tough, solitary, 2.5 cm. broad; surface smooth, dry, glabrous, very pale avellaneous, isabelline on the umbo, margin entire, pallid, finely striate: lamellae deeply sinuate with a decurrent tooth, subcrowded, arcuate, white: spores broadly ellipsoid, smooth, hyaline, granular, 8–10 × 6–7 μ: stipe smooth, glabrous, polished, equal, hollow, snow-white above, very pale avellaneous below, 15 cm. long, 2–3 mm. thick.

Type collected in leaf-mold under redwoods in Muir Woods, California, November 22, 1911, *W. A. Murrill 1132* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

86. **Prunulus magnus** Murrill, sp. nov.

Pileus very large for the genus, broadly convex, not fully expanding, gregarious to subcespitose, reaching 5 cm. broad; surface dry, glabrous, striate, avellaneous, slightly darker on the disk when dry: lamellae adnate, broad, rather distant, whitish: spores subglobose, smooth, hyaline, 6–7.5 μ: stipe compressed, equal, smooth, glabrous, avellaneous, 5–8 cm. long, 2–4 mm. thick.

Type collected on the ground in woods near Seattle, Washington, October 20–November 1, 1911, *W. A. Murrill 463* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Washington and Oregon.

87. **Prunulus Grantii** Murrill, sp. nov.

Pileus broad, convex to plane and at length depressed, not papillate, cespitose, 3–3.5 cm. broad; surface smooth, dry, glabrous, pale-avellaneous: context thin, white, the taste mild;

lamellae adnate, rather crowded, of medium breadth, thin and delicate, pure-white: spores subglobose to ellipsoid, smooth, hyaline, 6–7 × 5–6 μ: stipe equal, dry, smooth, glabrous, concolorous, hollow, with a thin rind, 6–8 cm. long, about 5 mm. thick.

Type collected on the ground among leaves and bits of dead wood at Sequim, Washington, *J. M. Grant 332* (herb. N. Y. State Mus.).

DISTRIBUTION: Known only from the type locality.

88. **Prunulus Myrciae** (Pat.) Murrill.

Androsaceus Myrciae Pat. Bull. Soc. Myc. Fr. **15**: 192. 1899.

Pileus very minute, orbicular, convex-campanulate, obtuse, cespitose, 1–2 mm. broad; surface white, changing to lemon-yellow on drying and becoming tinged with russet on the disk, smooth or slightly striate, pellucid, fleshy, covered with a pellicle formed of rounded, hyaline, verrucose cells reaching 8–12 μ in diameter: lamellae white, few, quite thick, adnate to slightly decurrent, inserted, not connected by veins: spores ovoid, smooth, hyaline, 5 × 3 μ: stipe white, cylindric, delicate, almost filiform, equal or scarcely enlarged below, 4–6 mm. long, pubescent over its entire surface with cylindric, unicellular hairs which are scattered or in tufts.

TYPE LOCALITY: Guadeloupe.
HABITAT: On dying leaves of *Myrcia*.
DISTRIBUTION: Known only from the type locality.

89. **Prunulus alphitophorus** (Berk.) Murrill.

Agaricus (*Mycena*) *alphitophorus* Berk. Jour. Linn. Soc. **15**: 48. 1877.
Mycena alphitophora Sacc. Syll. Fung. **5**: 290. 1887.

Pileus conic-campanulate, 2 mm. broad; surface white, farinaceous: lamellae narrow, ascending, white: stipe filiform, white, 12–25 mm. long.

TYPE LOCALITY: Bermuda.
HABITAT: On small twigs in marshes.
DISTRIBUTION: Known only from the type locality.

90. **Prunulus subpulverulentus** Murrill, sp. nov.

Pileus minute, delicate, conic to campanulate, gregarious to subcespitose, 4 mm. broad; surface striate, pulverulent, snow-white with a creamy tint, margin entire, appressed when young: lamellae adnate, subcrowded, white: stipe filiform, equal, smooth, subglabrous, white, mycelioid at the base, 1–1.5 cm. long, less than 1 mm. thick.

Type collected on decayed sticks in a moist virgin forest along the Tepeite River, near Cuernavaca, Mexico, 2100 m. elevation, December 28, 1909, *W. A. & Edna L. Murrill 473* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

91. **Prunulus trojanus** Murrill, sp. nov.

Pileus broadly convex, slightly umbonate, becoming depressed at the center, cespitose, 1.5–2 cm. broad; surface smooth, dry, glabrous, white or whitish, becoming striate over the lamellae on drying, margin entire, concolorous, appressed when young: lamellae adnate, slightly decurrent at times, inserted, rather distant, broad, white: spores globose, smooth, hyaline, 5–7 μ: stipe equal, smooth, glabrous, white, 3 cm. long, 2 mm. thick.

Type collected on decayed wood in Troy and Tyre, Cockpit Country, Jamaica, 600 m. elevation, January 12–14, 1909, *W. A. Murrill & W. Harris 866* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

92. **Prunulus roridulus** (Berk. & Curt.) Murrill.

Agaricus (*Mycena*) *roridulus* Berk. & Curt. Jour. Linn. Soc. **10**: 285. 1868.
Mycena roridula Sacc. Syll. Fung. **5**: 297. 1887.

Pileus thin, convex to plane, 6 mm. broad; surface white, fuscous on the umbo, viscid: lamellae adnate, broad, puberulent, white, the interstices subtrabeculate: stipe equal, glabrous, subfuscous, hollow, 2.5 cm. long, 1 mm. thick.

TYPE LOCALITY: Cuba.
HABITAT: On rotten wood.
DISTRIBUTION: Known only from the type locality.

93. **Prunulus margarita** Murrill, sp. nov.

Pileus broadly convex with a small umbo, solitary, 1 cm. broad; surface glabrous, distantly and regularly striate, ashy-white, almost pearly, slightly depressed about the pale-avellaneous umbo, margin very thin, entire, concolorous: lamellae adnate to a collar, subdistant, rather broad, white with a pearly tint: stipe cylindric, equal, curved, smooth, glabrous, pearly, avellaneous at the base, 1.5 cm. long, 1 mm. thick.

Type collected on decayed wood under tree ferns at Morce's Gap, Jamaica, 1500 m. elevation, December 29, 30, January 2, 1908–9, *W. A. & Edna L. Murrill 731* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

94. **Prunulus viridigriseus** Murrill, sp. nov.

Pileus broadly convex, minutely papillate, often becoming slightly umbilicate, at least on drying, gregarious, 1.5–2 cm. broad; surface dry, innately pubescent-fibrillose, greenish-gray, almost glaucous, margin fimbriate, concolorous, slightly striate: lamellae adnexed, very broad, subcrowded, greenish-gray: spores globose, smooth, hyaline, 5–6 μ: stipe cylindric, equal, short, smooth, glabrous, stramineous, attached by a broad, circular mat of mycelium, 2 cm. long, 1–2 mm. thick.

Type collected on a dead log at Troy and Tyre, Cockpit Country, Jamaica, January 12–14, 1909, *W. A. Murrill & W. Harris 948* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

95. **Prunulus cinereiavellaneus** Murrill, sp. nov.

Pileus small, delicate, conic, solitary, 6 mm. broad, 5 mm. high; surface smooth, glabrous, striate, pale-avellaneous, ashy-white on the umbo: lamellae adnexed, subcrowded, rather narrow, dull-white: spores globose, smooth, hyaline, granular, 5–6 μ: stipe cylindric, equal, whitish-pulverulent at the apex, very pale avellaneous or dull-whitish below, 2 cm. long, 1 mm. thick.

Type collected in soil rich in humus on a bank at Monkey Hill, near Cinchona, Jamaica, 1700 m. elevation, January 4, 1909, *W. A. & Edna L. Murrill 775* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

96. **Prunulus fumosiavellaneus** Murrill, sp. nov.

Pileus minute, delicate, conic to campanulate, gregarious, 4 mm. broad, 5 mm. high; surface glabrous, striate, avellaneous with a fumosous tint, margin entire, pallid, appressed when young: lamellae adnate, distant, broad, white: spores globose, smooth, hyaline, 5–7.5 μ: stipe very slender, equal, smooth, whitish-pulverulent, about 2 cm. long.

Type collected on dead wood at Chester Vale, Jamaica, 900–1200 m. elevation, December 21–24, 1908, *W. A. & Edna L. Murrill 310* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

97. **Prunulus avellaneigriseus** Murrill, sp. nov.

Pileus hemispheric, not expanding, cespitose, 7 mm. broad and 5 mm. high; surface smooth, grayish-pulverulent, avellaneous, margin entire, concolorous, appressed when young: lamellae adnate, very distant, rather narrow, arcuate, white: spores globose, smooth, hyaline, 4–6 μ: stipe cylindric, equal, smooth, glabrous, milk-white, 2 cm. long, 2 mm. thick.

Type collected on dead wood on a shaded bank at Chester Vale, Jamaica, 900–1200 m. elevation, December 21–24, 1908, *W. A. & Edna L. Murrill 291* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

98. **Prunulus gracillipes** Murrill, sp. nov.

Pileus hemispheric, rather thin, gregarious, 8 mm. broad, 5 mm. high: surface glabrous, striate, fulvous when wet, nearly avellaneous when dry, margin entire, concolorous: lamellae adnate with a slight decurrent tooth, very distant, narrow, white: spores ellipsoid, smooth, hyaline, 7–8 $\times$ 3–4 μ: stipe very long and slender, cylindric, equal, smooth, glabrous, latericeous, becoming paler on drying, more or less mycelioid at the base, 5–7 cm. long, 0.5 mm. thick.

Type collected on a dead log at Cinchona, Jamaica, about 1500 m. elevation, December 25–January 8, 1908–9, *W. A. & Edna L. Murrill 606* (herb. N. Y. Bot. Gard.).

HABITAT: On dead logs and in leaf-mold.

DISTRIBUTION: Vicinity of Cinchona, Jamaica.

99. **Prunulus argillaceus** Murrill, sp. nov.

Pileus small, delicate, conic to campanulate, reaching 1 cm. broad; surface striate, glabrous, avellaneous, margin entire, concolorous, appressed when young: lamellae adnate, broad, subcrowded, white: spores globose or subglobose, smooth, hyaline, 4–6 μ: stipe slender, equal, smooth, glabrous, hollow, white, 1.5 cm. long, 1 mm. thick.

Type collected on a wet, much-decayed log in a moist virgin forest on a mountain side at Motzorongo, near Cordoba, Mexico, about 300 m. elevation, January 15, 1910, *W. A. & Edna L. Murrill 1053* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

100. **Prunulus pubescens** Murrill, sp. nov.

Pileus convex, gregarious, 8–12 mm. broad; surface smooth, dry, minutely downy, dark-brown, margin entire, not striate, concolorous; lamellae adnate, inserted, narrow, pure-white: stipe cylindric, equal, tough, white and distinctly pubescent, especially above, brownish at the base, 3 cm. long, 1 mm. thick.

Type collected on decayed wood at Moore Town, Jamaica, November 22, 1902, *F. S. Earle 563* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

101. **Prunulus cinchonensis** Murrill, sp. nov.

Pileus conic to campanulate, gregarious, reaching 1.5 cm. broad and 1 cm. high; surface dry, glabrous, striate, pale-isabelline or avellaneous, usually avellaneous on the disk, margin entire, pale-isabelline, appressed when young: lamellae adnate, slightly decurrent at times, crowded, rather narrow, white: spores globose, smooth, hyaline, 4–5 μ: stipe cylindric, equal, smooth, glabrous, slightly pulverulent at the apex, whitish, avellaneous at the base when the pileus is avellaneous, 3–4 cm. long, about 1 mm. thick.

Type collected on dead sticks at Cinchona, Jamaica, about 1500 m. elevation, December 25–January 8, 1908–9, *W. A. & Edna L. Murrill 550* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

102. **Prunulus carbonicola** Murrill, sp. nov.

Pileus broadly convex, scattered, reaching 2 cm. broad; surface glabrous, hygrophanous, faintly striate to the disk, ochraceous-brown, darker and slightly floccose when young, margin entire, concolorous: lamellae adnate, subventricose, subconcolorous, crowded: spores ellipsoid, smooth, hyaline, 7–8 × 5–6 μ: stipe cylindric, subequal, glabrous, shining, white, hollow, 3–4 cm. long, 2 mm. thick.

Type collected on burned sticks in Cooper's Ranch, at the base of El Yunque Mountain, Baracoa, Cuba, March, 1903, *L. M. Underwood & F. S. Earle 423* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

103. **Prunulus syringeus** Murrill, sp. nov.

Pileus minute, hemispheric, solitary, 5 mm. broad, 3 mm. high; surface lilac-colored, fulvous on the disk, subgranulose in appearance, margin entire, concolorous: lamellae distant, inserted, rather broad, adnate, violet-colored: spores globose or subglobose, smooth, hyaline, about 4 μ: stipe cylindric, equal, glabrous, melleous, lilac-colored at the apex, 2 cm. long, less than 1 mm. thick.

Type collected in humus in woods in Troy and Tyre, Cockpit Country, Jamaica, 600 m. elevation, January 12–14, 1909, *W. A. Murrill & W. Harris 1097* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

104. **Prunulus testaceus** Murrill, sp. nov.

Pileus thin, broadly convex, gregarious, 8 mm. broad; surface dry, tomentose, dark-testaceous, darker on the disk: lamellae adnate, pale-testaceous, crowded, narrow, sharply dentate on the edges: spores ellipsoid, smooth, hyaline, 7 × 3–4 μ: stipe cylindric, equal, subglabrous, pale-testaceous, 1.3 cm. long, 1 mm. thick.

Type collected in humus on the ground under tree ferns at Morce's Gap, Jamaica, 1500 m. elevation, December 29, 30, January 2, 1908–9, *W. A. & Edna L. Murrill 709* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

105. **Prunulus latericius** Murrill, sp. nov.

Pileus campanulate, solitary, 1 cm. broad, 8 mm. high; surface glabrous, latericeous, margin concolorous, not striate: lamellae broad, subdistant, slightly sinuate, testaceous: spores ovoid, smooth, hyaline, 6 × 3.5 μ: stipe tapering downward, smooth, glabrous, latericeous, 2 cm. long, 2.5 mm. thick.

Type collected in moss on the ground under tree ferns at Morce's Gap, Jamaica, 1500 m. elevation, December 29, 30, January 2, 1908–9, *W. A. & Edna L. Murrill 725* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

106. **Prunulus corrugatus** (Pat.) Murrill.

Androsaceus corrugatus Pat. Bull. Soc. Myc. Fr. **16**: 175. 1900.

Pileus fleshy-membranous, orbicular, convex, 10–20 mm. broad; surface chestnut-red, glabrous, corrugated on the disk, margin neither striate nor plicate: lamellae unequal, adnate, very crowded, narrow, fleshy, undulate or crisped, fawn-colored: stipe coriaceous, tough, cylindric, straight or curved, glabrous, shining, reddish-black, paler at the apex, expanded at the base into a small, concolorous weft of mycelium, 2–3 cm. long, 1 mm. thick.

TYPE LOCALITY: Guadeloupe.
HABITAT: On all kinds of rotten wood.
DISTRIBUTION: Guadeloupe.

DOUBTFUL SPECIES

Mycena acicula (Schaeff.) Quél. Champ. Jura Vosg. 73. 1872. (*Agaricus acicula* Schaeff. Fung. Bavar. **4**: Ind. 52. 1774.) Reported from many parts of North America and also from Cuba. No correctly determined specimens were found at Albany. The Cuban specimens at Kew are very tiny and difficult to compare. *P. amabillissimus* and *P. pulcherrimus* are probably the nearest relatives in this country.

Mycena Adonis (Bull.) Quél. Champ. Jura Vosg. 68. 1872. (*Agaricus Adonis* Bull. Herb. Fr. *pl. 560, f. 2;* hyponym. 1793; Pers. Syn. Fung. 391. 1801.) Reported from the Carolinas by the older mycologists. Correctly determined specimens are not to be found at Albany.

Mycena alcalina (Fries) Quél. Champ. Jura Vosg. 71. 1872. (*Agaricus alcalinus* Fries, Obs. Myc. **2**: 153. 1818.) Reported from most of the eastern United States by American mycologists, but the plants have a different appearance and lack the strong alkaline odor found in fresh specimens collected in Sweden. *P. capillaripes* Peck has a weak alkaline odor but is quite distinct. See *P. alcaliniformis*.

Mycena amicta (Fries) Quél. Champ. Jura Vosg. 223. 1872. (*Agaricus amictus* Fries, Obs. Myc. **1**: 141. 1815.) Reported from North Carolina and California.

Mycena californiensis (Berk. & Curt.) Sacc. Syll. Fung. **5**: 255. 1887. (*Agaricus* (*Mycena*) *californiensis* Berk. & Curt. Proc. Am. Acad. **4**: 112. 1858.) Described from specimens collected on dead oak leaves on Mare Island, California. The types at Paris are very poorly preserved.

Mycena capillaris (Schum.) P. Karst. Bidr. Finl. Nat. Folk **32**: 124. 1879. Reported by Ravenel, Ellis, and others. The species is described as very minute with a hair-like stipe.

Mycena citrinella (Pers.) Quél. Champ. Jura Vosg. 74. 1872. (*Agaricus citrinellus* Pers. Ic. Descr. Fung. 44. 1800.) Reported from many parts of North America by the older mycologists and also from Dominica by Miss A. L. Smith. Plants at Albany from New Scotland so determined by Peck seem near *P. epipterygius*, but are much smaller than the usual form of that species.

Mycena conferruminata (Berk. & Mont.) Sacc. Syll. Fung. **5**: 258. 1887. (*Agaricus* (*Mycena*) *conferruminatus* Berk. & Mont. Syll. Crypt. 110. 1856.) Collected on soil mixed with decayed wood near Columbus, Ohio. The surface is described as purplish-yellow and the lamellae as white.

Mycena debilis (Fries) Quél. Champ. Jura Vosg. 72. 1872. (*Agaricus debilis* Fries, Epicr. Myc. 112. 1838.) Reported from North Elba by Peck.

Mycena discreta (Fries) Sacc. Syll. Fung. **5**: 260. 1887. (*Agaricus discretus* Fries, Elench. Fung. 20. 1828.) Described from specimens collected on the Island of Santa Cruz by Benzon.

Mycena elegans (Pers.) Quél. Champ. Jura Vosg. 221. 1872. (*Agaricus elegans* Pers. Syn. Fung. 391. 1801.) Reported from the Carolinas by the older mycologists. The lamellae are described as yellow on the edges. Schröter says cystidia are present, filled with orange-colored sap.

Mycena filopes (Bull.) Quél. Champ. Jura Vosg. 72. 1872. (*Agaricus filopes* Bull. Herb. Fr. *pl. 320.* 1786.) Reported from many parts of the eastern United States by the older mycologists and also from Colorado by Clements.

Mycena hiemalis (Osbeck) P. Karst. Bidr. Finl. Nat. Folk **32**: 124. 1879. Reported from Cuba, California, and elsewhere and said by some to be the same as *P. corticalis* (Bull.) Murrill. Bambeke says it is very near this species but that no cystidia are present. He describes the spores as globose or subglobose, 7–9 μ.

Mycena Iris (Berk.) Quél. Champ. Jura Vosg. 223. 1872. (*Agaricus* (*Mycena*) *Iris* Berk. in Smith, Engl. Fl. 5^2: 56. 1836.) Reported from Nebraska, Minnesota, California, and elsewhere. A specimen at Albany so determined by Peck proves to be *P. cyaneobasis.*

Mycena lactea (Pers.) Quél. Champ. Jura Vosg. 69. 1872. (*Agaricus lacteus* Pers. Syn. Fung. 394. 1801.) Reported from New England to South Carolina by the older mycologists. There is one small specimen at Albany from the Catskills so named by Peck. Persoon describes the plant as entirely white, while Bulliard and Fries refer to the disk as yellowish.

Mycena leptocephala (Pers.) P. Karst. Bidr. Finl. Nat. Folk **32**: 109. 1879. (*Agaricus leptocephalus* Pers. Ic. Descr. Fung. 48. 1798.) Reported from North Carolina by Schweinitz.

Mycena lilacina (Mont.) Sacc. Syll. Fung. **5**: 257. 1887. (*Agaricus* (*Mycena*) *lilacinus* Mont. Syll. Crypt. 110. 1856.) Collected on fallen decayed wood at Columbus, Ohio, and described as lilac with rosy-ochraceous lamellae.

Mycena lineata (Bull.) Quél. Champ. Jura Vosg. 68. 1872. (*Agaricus lineatus* Bull. Herb. Fr. *pl. 522, f. 3;* hyponym. 1790; Pers. Syn. Fung. 383. 1801.) Reported from North Carolina by Schweinitz as occurring there in grassy land.

Mycena metata (Fries) Quél. Champ. Jura Vosg. 71. 1872. (*Agaricus metatus* Fries, Syst. Myc. **1**: 144. 1821.) Recently reported by Peck, but the specimens seen at Albany do not correspond to authentic material obtained from Bresadola.

Mycena polygramma (Bull.) Quél. Champ. Jura Vosg. 70. 1872. (*Agaricus polygrammus* Bull. Herb. Fr. *pl. 395.* 1788.) Reported from many parts of the eastern United States but the specimens so named do not appear to match authentic material from Europe.

Mycena pseudopura (Cooke) Sacc. Syll. Fung. **5**: 257. 1887. (*Agaricus* (*Mycena*) *pseudopurus* Cooke, Grevillea **10**: 147. 1882.) Reported from New York and Massachusetts. The species seems to have been confused with *P. purus,* both in Europe and in this country.

Mycena radius (Johnston) Sacc. Syll. Fung. **9**: 37. 1891. (*Agaricus* (*Mycena*) *radius* Johnston, Bull. Minn. Acad. **1**: 218. 1877.) Described from specimens collected on the ground in Minnesota in May.

Mycena rubromarginata (Fries) P. Karst. Bidr. Finl. Nat. Folk **32**: 99. 1879. (*Agaricus rubromarginatus* Fries, Obs. Myc. **1**: 42. 1815.) Reported by Frost and by Peck. Kauffman recently collected specimens at North Elba which he describes as smaller than the type, with the edges of the lamellae fuscous-brown and scarcely reddish-tinted. The spores of his plant are 10–12 $\times$ 6–7 μ, differing from those of *P. purpureofuscus.*

Mycena rugosa (Fries) Quél. Champ. Jura Vosg. 69. 1872. (*Agaricus rugosus* Fries, Epicr. Myc. 106. 1838.) Reported from New York, Wisconsin, Kansas, and California. The species is unquestionably very near some of our plants.

Mycena stylobates (Pers.) Quél. Champ. Jura Vosg. 75. 1872. (*Agaricus stylobates* Pers. Syn. Fung. 390. 1801.) Reported from many parts of North America. Schröter says the spores are cylindric-ellipsoid, 6–7 $\times$ 3 μ. Peck describes a gray, striate, American form, which does not correspond with authentic specimens of the species from Bresadola.

Mycena tintinabulum (Fries) Quél. Champ. Jura Vosg. 70. 1872. (*Agaricus tintinabulum* Fries, Epicr. Myc. 107. 1838.) Reported more than once from this country by the older mycologists. Several New York collections so determined by Peck are *Prunulus curvipes.* The plant figured by Fries is larger and resembles a short-stemmed specimen of *P. galericulatus.*

Mycena vitilis (Fries) Quél. Champ. Jura Vosg. 72. 1872. (*Agaricus vitilis* Fries, Epicr.

Myc. 113. 1838.) Reported from New Jersey by Ellis, from Minnesota by Johnston, and from New York by Kauffman.

35. **OMPHALINA** Quél. Ench. Fung. 42. 1886.

Pileus umbilicate, the margin at first incurved, solitary or gregarious: lamellae decurrent: spores hyaline: stipe central, tubular, with cartilaginous cortex.

Type species, *Omphalina hydrogramma* (Fries) Quél.

I. SPECIES OCCURRING IN TEMPERATE NORTH AMERICA, EXCEPT THOSE CONFINED TO THE PACIFIC COAST

Pileus white.
- Pileus 4–8 mm. broad; stipe 8–16 mm. long. — 1. *O. buccinalis.*
- Pileus 1–3.5 cm. broad; stipe 2.5–5 cm. long. — 2. *O. eximia.*

Pileus yellowish or yellowish-brown.
- Pileus convex. — 3. *O. umbellifera.*
- Pileus umbilicate or depressed.
  - Lamellae crowded, narrow.
    - Lamellae white.
      - Stipe 4 cm. long. — 4. *O. subcartilaginea.*
      - Stipe 7–10 cm. long. — 5. *O. Dawsonii.*
    - Lamellae pale-lilac. — 6. *O. lilacifolia.*
  - Lamellae distant, broad.
    - Lamellae white, becoming yellowish; spores subglobose, 4–5 μ long. — 7. *O. strombodes.*
    - Lamellae bright-yellow; spores oblong-ellipsoid, 10–11 $\times$ 4–5 μ. — 8. *O. chrysophylla.*

Pileus brick-red or reddish-brown. — 9. *O. subhepatica.*

Pileus gray, brown, or fuliginous.
- Hymenophore occurring on soil.
  - Pileus 6–11 mm. broad; spores 7.5–10 $\times$ 4–6 μ. — 10. *O. rustica.*
  - Pileus 10–20 mm. broad; spores subglobose, 4 μ. — 11. *O. Volkertii.*
- Hymenophore occurring on dead wood or in sphagnum.
  - Pileus 6–12 mm. broad; lamellae yellow. — 12. *O. subclavata.*
  - Pileus 12–24 mm. broad; lamellae whitish to cinereous. — 13. *O. Epichysium.*

II. SPECIES OCCURRING ON THE PACIFIC COAST

Pileus some shade of yellow or yellowish-brown.
- Lamellae white.
  - Lamellae crowded. — 14. *O. Sequoiarum.*
  - Lamellae distant. — 3. *O. umbellifera.*
- Lamellae yellow.
  - Pileus pale-luteous to almost orange. — 15. *O. luteicolor.*
  - Pileus yellowish-brown. — 8. *O. chrysophylla.*

Pileus brick-red or reddish-brown. — 9. *O. subhepatica.*

Pileus avellaneous or fuliginous.
- Pileus convex, sometimes umbonate. — 16. *O. hypobrunnea.*
- Pileus umbilicate. — 13. *O. Epichysium.*

III. SPECIES OCCURRING IN TROPICAL NORTH AMERICA

Pileus white or whitish.
- Pileus about 1 cm. or less broad.
  - Pileus about 5 mm. broad; stipe 6 mm. long. — 17. *O. niveicolor.*
  - Pileus 8–13 mm. broad; stipe 1–4 cm. long.
    - Pileus not umbonate.
      - Stipe 2 cm. long; pileus 13 mm. broad. — 18. *O. subscyphoides.*
      - Stipe 4 cm. long; pileus 8 mm. broad. — 19. *O. tepeitensis.*
    - Pileus umbonate.
      - Pileus convex, with an abrupt, small umbo. — 20. *O. cuspidatella.*
      - Pileus conic, with a long, pointed umbo. — 21. *O. acuminata.*
- Pileus 3 cm. or more broad.
  - Pileus convex to umbilicate; lamellae distant. — 22. *O. collybiiformis.*
  - Pileus infundibuliform; lamellae crowded. — 23. *O. jalapensis.*

Pileus yellow or yellowish.
- Pileus infundibuliform, 1–1.5 cm. broad.
  - Surface isabelline. — 24. *O. lenta.*
  - Surface flavovirens, becoming melleous. — 25. *O. flavella.*
- Pileus convex, 2–3 cm. broad.
  - Stipe 1 mm. thick. — 26. *O. Earlei.*
  - Stipe 2–4 mm. thick. — 27. *O. cremea.*

Pileus umbrinous. — 28. *O. chondripes.*

Pileus red or reddish.
- Pileus 6 mm. broad; lamellae distant. — 29. *O. miniata.*
- Pileus 12 mm. broad; lamellae crowded. — 30. *O. coccinea.*
- Pileus 2.5 cm. broad. — 31. *O. incarnata.*

1. **Omphalina buccinalis** (Batsch) Murrill.

Agaricus buccinalis Batsch, Elench. Fung. Contin. 2: 85. 1789.
Agaricus scyphoides Fries, Syst. Myc. 1: 163. 1821.
Omphalia scyphoides Quél. Champ. Jura Vosg. 64. 1872.
Omphalina scyphoides Quél. Ench. Fung. 42. 1886.

Pileus submembranous, plane and umbilicate or infundibuliform, often irregular or somewhat eccentric, gregarious, 4–8 mm. broad; surface even, silky, white: lamellae narrow, close, decurrent, white: spores ellipsoid, 6 × 4–5 μ: stipe white, subvillose, short, stuffed, 8–16 mm. long.

TYPE LOCALITY: Europe.
HABITAT: On the ground in mossy, grassy, or weedy places.
DISTRIBUTION: New England to Alabama in the eastern United States; also in Europe.
ILLUSTRATION: Fries, Ic. Myc. *pl. 75, f. 2.*

2. **Omphalina eximia** (Peck) Murrill.

Omphalia eximia Peck, Bull. Torrey Club **25**: 370. 1898.

Pileus thin, infundibuliform or deeply umbilicate, 1–3.5 cm. broad; surface glabrous, white, becoming grayish-white on drying, margin thin, spreading or deflexed; lamellae very decurrent, subdistant, narrow, white: spores subglobose, 4–5 μ: stipe glabrous, white, slender, equal or slightly enlarged above, hollow, 2.5–5 cm. long, 2–3 mm. thick.

TYPE LOCALITY: Alabama.
HABITAT: On decaying wood.
DISTRIBUTION: Known only from the type locality.

3. **Omphalina umbellifera** (L.) Quél. Ench. Fung. 44. 1886.

Agaricus umbelliferus L. Sp. Pl. 1175. 1753.
Omphalia luteola Peck, Bull. Torrey Club **23**: 411. 1896.
Omphalia sphagnophila Peck, Harriman Alaska Exp. Crypt. **5**: 47. 1904.
Omphalia vestita Peck, Bull. Torrey Club **34**: 345. 1907.

Pileus convex or nearly plane, somewhat obconic, 8–16 mm. broad; surface hygrophanous, radiate-striate when moist, whitish, pale-yellow, or yellowish-brown: lamellae broad, distant, somewhat triangular, white: spores ovoid, 8–11 × 5–7 μ: stipe short, stuffed, becoming hollow, 12–20 mm. long, 1 mm. thick.

TYPE LOCALITY: Europe.
HABITAT: On the ground among mosses or on decaying wood.
DISTRIBUTION: Greenland to Alaska, British Columbia, and Washington, and southward along the Alleghanies to North Carolina; also in Europe.
ILLUSTRATION: Cooke, Brit. Fungi *pl. 271 (260)*.

4. **Omphalina subcartilaginea** Murrill, sp. nov.

Pileus tough, subcartilaginous, convex, deeply umbilicate, gregarious, 1–2 cm. broad; surface smooth, glabrous, uniformly pale-tan, margin concolorous, estriate, incurved when young: lamellae short-decurrent, crowded, narrow, white: spores ellipsoid, smooth, hyaline, 6–7 × 3–4 μ: stipe cylindric, equal, firm, smooth, glabrous, pruinose at the apex, concolorous, solid, 4 cm. long, 2 mm. thick.

Type collected on decayed limbs in wet woods at New Orleans, Louisiana, September 7, 1908, *F. S. Earle 103* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

5. **Omphalina Dawsonii** Murrill, sp. nov.

Pileus convex, depressed at the center, rather fleshy, cespitose, 3–5 cm. broad; surface smooth, glabrous, isabelline to pale-fulvous, margin concolorous, estriate, undulate, incurved when young: context white, mildly astringent, with a slightly unpleasant odor: lamellae decurrent, crowded, narrow, thin, dirty-white: spores subglobose, smooth, hyaline, 4–6 μ: stipe subfleshy, cylindric, smooth, glabrous, concolorous, hollow, 7–10 cm. long, 3–5 mm. thick, closely united by mycelium with two or more adjacent stipes for some distance from the base.

Type collected on a rotten log at Lima, Ohio, in 1902, *C. W. Dawson 49* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

6. **Omphalina lilacifolia** (Peck) Murrill.

Agaricus lilacinus Peck, Ann. Rep. N. Y. State Mus. **24**: 63. 1872. Not *A. lilacinus* Mont. 1856.
Agaricus lilacifolius Peck, Ann. Rep. N. Y. State Mus. **29**: 66. 1878.
Omphalia lilacifolia Peck, Ann. Rep. N. Y. State Mus. **45**: 94 (34). 1893.

Pileus convex, deeply umbilicate, 12–24 mm. broad; surface glabrous, viscid, hygrophanous, dingy-yellow with a slight greenish tint and striatulate when moist, bright-sulphur-yellow when dry: lamellae crowded, narrow, arcuate, decurrent, pale-lilac: spores subellipsoid, 5–6 × 3 μ: stipe equal, glabrous, viscid, yellowish with pale-lilac-colored mycelium at the base, hollow, 12–24 mm. long, 1–2 mm. thick.

TYPE LOCALITY: Trenton Falls, New York.
HABITAT: On decaying prostrate trunks of hemlock.
DISTRIBUTION: New York.

7. **Omphalina strombodes** (Berk. & Mont.) Murrill.

Agaricus (*Omphalia*) *strombodes* Berk. & Mont. Syll. Crypt. 112. 1856.
Agaricus alboflavus Morgan, Jour. Cinc. Soc. Nat. Hist. **6**: 76. 1883.
Omphalia strombodes Sacc. Syll. Fung. **5**: 318. 1887.
Omphalia alboflava Sacc. Syll. Fung. **5**: 327. 1887.

Pileus fleshy-membranous, depressed to infundibuliform, 4–7.5 cm. broad; surface radiate-fibrillose to glabrous, whitish, becoming yellow at maturity, rarely darker, margin irregular, inflexed: lamellae decurrent, very distant, arcuate, broad, thin, white, becoming yellowish: spores subglobose, 4–5 μ long: stipe white or yellow, grayish-pulverulent, stuffed or hollow, enlarged at the apex, 2.5–5 cm. long.

TYPE LOCALITY: Columbus, Ohio.
HABITAT: On rotten logs or buried wood.
DISTRIBUTION: Southern Pennsylvania to North Carolina and Ohio.
ILLUSTRATION: Jour. Cinc. Soc. Nat. Hist. **6**: *pl. 5, f. 2.*

8. **Omphalina chrysophylla** (Fries) Murrill.

Agaricus chrysophyllus Fries, Syst. Myc. **1**: 167. 1821.
Agaricus (*Omphalia*) *xanthophyllus* Berk. & Curt. Ann. Mag. Nat. Hist. III. **4**: 287. 1859.
Agaricus chryseus Peck, Ann. Rep. N. Y. State Cab. **23**: 85. 1872.
Omphalia chrysophylla P. Karst. Bidr. Finl. Nat. Folk **32**: 128. 1879.

Pileus convex or nearly plane, umbilicate, 2.5 cm. or more broad; surface flocculose, hygrophanous, yellowish-brown when moist, paler when dry, margin spreading, sometimes reflexed: lamellae broad, distinct, subdistant, strongly decurrent, bright-yellow: spores oblong-ellipsoid, 10–11 × 5 μ: stipe even, glabrous, villose at the base, yellow, tough, hollow, sometimes curved, equal, 2.5–3 cm. long, 2–4 mm. thick.

TYPE LOCALITY: Europe.
HABITAT: On decaying wood of coniferous trees.
DISTRIBUTION: Canada to Oregon and southward in the eastern United States to South Carolina.
ILLUSTRATIONS: Fries, Ic. Myc. *pl. 74, f. 1;* Hard, Mushrooms *f. 100.*

9. **Omphalina subhepatica** (Batsch) Murrill.

Agaricus subhepaticus Batsch, Elench. Fung. Contin. **2**: 77. 1789.
Agaricus pyxidatus Bull. & Vent. Hist. Champ. Fr. **1**: 514. 1809. Not *A. pyxidatus* Schum. 1801.
Omphalia pyxidata Quél. Champ. Jura Vosg. 64. 1872.
Omphalina pyxidata Quél. Ench. Fung. 43. 1886.

Pileus at first convex or nearly plane and umbilicate, becoming infundibuliform, 12–24 mm. broad; surface glabrous, hygrophanous, brick-red or reddish-brown, entirely or partly radiate-striate, becoming pallid when dry and flocculose or slightly silky, margin striate when moist: lamellae narrow, subdistant, decurrent, tinged with flesh-color, becoming yellowish: spores subellipsoid, 6–7.5 × 4–5 μ: stipe glabrous, pallid or reddish, equal, tough, stuffed or hollow, 2.5 cm. long, 2 mm. thick.

TYPE LOCALITY: Europe.
HABITAT: On grassy or mossy ground in pastures.
DISTRIBUTION: Canada to North Carolina and west to Washington and California; also in Europe.
ILLUSTRATIONS: Batsch, Elench. Fung. *f. 211;* Bull. Herb. Fr. *pl. 568, f. 2;* Cooke, Brit. Fungi *pl. 194(254)B.*

10. **Omphalina rustica** (Fries) Quél. Ench. Fung. 43. 1886.

Agaricus rusticus Fries, Epicr. Myc. 124. 1838.
Omphalia rustica Quél. Champ. Jura Vosg. 65. 1872.

Pileus membranous, convex, umbilicate, 6–11 mm. broad; surface glabrous, hygrophanous, silky when dry, gray to whitish or brownish, margin striate when moist: lamellae decurrent, subdistant, thick, with the ends equally attenuate, gray: spores ellipsoid, 7.5–10 × 4–6 μ: stipe glabrous, grayish-brown, slender, equal or enlarged above, stuffed, 2.5 cm. long, 1 mm. thick.

TYPE LOCALITY: Europe.
HABITAT: On the ground in woods or thickets.
DISTRIBUTION: New York, Illinois, and Ohio; also in Europe.

11. **Omphalina Volkertii** Murrill.

Omphalia Volkertii Murrill, Mycologia **3**: 98. 1911.

Pileus infundibuliform to umbilicate, tough, flexible, solitary or gregarious, 1–2 cm. broad, about 7 mm. high; surface glabrous, hygrophanous, fuliginous, becoming avellaneous soon after picking: lamellae decurrent, distant, tough, discolored-avellaneous: spores subglobose, smooth, hyaline, 4 μ: stipe crooked, tapering toward the base, concolorous, glabrous, hollow, 1.5–2 cm. long, 1–2 mm. thick.

TYPE LOCALITY: Near the New York Botanical Garden, New York City.
HABITAT: Mossy fields, rarely on bare ground.
DISTRIBUTION: New York and Massachusetts.
ILLUSTRATION: Mycologia **3**: *pl. 40, f. 3.*

12. **Omphalina subclavata** (Peck) Murrill.

Omphalia subclavata Peck, Bull. Torrey Club **27**: 612. 1900.

Pileus thin, submembranous, subclavate or tubaeform, deeply umbilicate, 6–12 mm. broad; surface glabrous, grayish-brown: lamellae very decurrent, subdistant, yellow: spores ellipsoid, 6–7.5 × 4–5 μ: stipe slender, whitish, hollow, subpruinose, tomentose at the base, 2.5 cm. long, 1 mm. thick.

TYPE LOCALITY: Missouri.
HABITAT: On dead wood.
DISTRIBUTION: Pennsylvania, Tennessee, and Missouri.

13. **Omphalina Epichysium** (Pers.) Quél. Ench. Fung. 43. 1886.

Agaricus Epichysium Pers. Disp. Fung. 25. 1797.
Omphalia Epichysium Quél. Champ. Jura Vosg. 65. 1872.
Agaricus (Clitocybe) Gerardianus Peck, Bull. Buffalo Soc. Nat. Sci. **1**: 46. 1873.
Agaricus (Omphalia) montanus Peck, Ann. Rep. N. Y. State Mus. **27**: 94. 1875. Not *A. montanus* Pers. 1796.
Clitocybe Gerardianus Sacc. Syll. Fung. **5**: 181. 1887.
Mycena montana Sacc. Syll. Fung. **5**: 255. 1887.

Pileus membranous, fragile, nearly plane, convex, umbilicate to infundibuliform, 12–24 mm. broad; surface hygrophanous, sooty-gray and striate when moist, paler when dry and silky or flocculose: lamellae narrow, subdistant, slightly decurrent, whitish or cinereous: spores ellipsoid, 7.5–10 × 4–6 μ: stipe glabrous, cinereous, equal, somewhat hollow, 2–6 cm. long, 1–2 mm. thick.

TYPE LOCALITY: Europe.
HABITAT: On decaying trunks or among sphagnum.
DISTRIBUTION: Maine to Alabama and west to Wisconsin and Seattle, Washington; also in Europe.
ILLUSTRATION: Atk. Stud. Am. Fungi *f. 101.*

14. **Omphalina Sequoiarum** Murrill, sp. nov.

Pileus infundibuliform, gregarious, 4.5–5 cm. broad; surface smooth, moist, glabrous, buff-colored, margin finely crenate, often splitting: context grayish-white, unchanging, without characteristic taste or odor; lamellae decurrent, inserted, crowded, rather narrow, white,

slightly grayish in herbarium specimens: spores ellipsoid, smooth, hyaline, 6–7 × 4–5 μ: stipe cylindric, smooth, glabrous, concolorous, solid, 4–5 cm. long, 3–4 mm. thick.

Type collected in humus under redwoods at Searsville Lake, near Stanford University, California, January 6, 1903, *James McMurphy 37* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

15. **Omphalina luteicolor** Murrill, sp. nov.

Pileus convex to depressed, gregarious to subcespitose, usually about 2 cm. broad, but sometimes reaching 4 cm.; surface smooth, glabrous, dry or moist, varying from pale-luteous to almost orange, margin not striate, entire, concolorous, incurved when young and clothed with minute white hairs, which disappear with age: lamellae short-decurrent, very distant, rather narrow, inserted, pale-luteous: spores oblong-ellipsoid, smooth, hyaline, 7–8.5 × 5–6 μ: stipe cylindric, equal, glabrous at the apex, whitish-myceloid at the base, pale-luteous, cartilaginous, hollow, 2–3 cm. long, usually about 3 mm. thick, but sometimes reaching 5 mm.

Type collected on a moss-covered coniferous log in a moist virgin forest near Seattle, Washington, October 20–November 1, 1911, *W. A. Murrill 685* (herb. N. Y. Bot. Gard.).
HABITAT: Abundant on the top of moss-covered or burnt coniferous logs.
DISTRIBUTION: Vicinity of Seattle, Washington.

16. **Omphalina hypobrunnea** Murrill, sp. nov.

Pileus convex to plane, umbonate at times, rather firm, solitary or gregarious, 1.5–2 cm. broad; surface smooth, glabrous, hygrophanous, avellaneous, dark-avellaneous on the disk: lamellae short-decurrent, rather broad, crowded, whitish with brown edges, becoming castaneous-umbrinous on drying: spores ellipsoid, smooth, hyaline, 6–7 × 3.5–5 μ: stipe tough, hygrophanous, subcylindric, smooth, finely tomentose to glabrous, concolorous, 1.5 cm. long, 1.5–2 mm. thick.

Type collected on dead wood in a moist virgin forest near Seattle, Washington, October 20–November 1, 1911, *W. A. Murrill 287* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

17. **Omphalina niveicolor** Murrill, sp. nov.

Pileus convex to nearly plane, gregarious, 3–5 mm. broad, rarely reaching 8 mm.; surface snow-white, smooth, glabrous, margin incurved when young, concolorous: lamellae decurrent, distant, narrow, forked, snow-white, becoming slightly rose-tinted with age, the edges rather obtuse when young but thin at maturity: stipe snow-white, smooth, glabrous, very slender, 6 mm. long.

Type collected on a wet log in a moist virgin forest along the Tepeite River, 2300 m. elevation, near Cuernavaca, Mexico, December 28, 1909, *W. A. & Edna L. Murrill 486* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

18. **Omphalina subscyphoides** Murrill, sp. nov.

Pileus convex, depressed at the center, solitary, reaching 13 mm. broad; surface dull-white, smooth, glabrous, margin irregular, concolorous: lamellae decurrent, white, distant, rather broad: stipe dilated above, smooth, glabrous, white, 2 cm. long, 2 mm. thick.

Type collected on the ground in a moist virgin forest along the Tepeite River, 2100 m. elevation, near Cuernavaca, Mexico, December 28, 1909, *W. A. & Edna L. Murrill 482* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

19. **Omphalina tepeitensis** Murrill, sp. nov.

Pileus hemispheric, solitary, 8 mm. broad; surface smooth, glabrous, white, hygrophanous, not viscid, margin incurved, concolorous: lamellae decurrent, white, distant, rather broad: stipe unusually long, cylindric, equal, smooth, glabrous, snow-white, 4 cm. long, nearly 2 mm. thick.

Type collected on the ground in humus in a moist virgin forest along the Tepeite River, 2100 m. elevation, near Cuernavaca, Mexico, December 28, 1909, *W. A. & Edna L. Murrill 479* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

20. **Omphalina cuspidatella** Murrill, sp. nov.

Pileus convex to plane, with an abrupt, small, conic, pointed umbo, cespitose, reaching 1 cm. broad; surface white, with a faint rosy tint, slightly silky, smooth, margin thin, entire, white: lamellae decurrent, arcuate, distant, white with a slightly yellowish tint: stipe slightly dilated above and tapering below, smooth, white, glabrous, 1.5 cm. long, 2 mm. thick.

Type collected on the ground in rich moist soil under tree ferns at Morce's Gap, Jamaica, December 29–January 2, 1908–9, *W. A. & Edna L. Murrill 727* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

21. **Omphalina acuminata** Murrill, sp. nov.

Pileus conic, with a very long, pointed umbo, gregarious to subcespitose, scarcely reaching 1 cm. broad; surface slightly viscid when moist, pruinose to glabrous, white, margin entire, concolorous, incurved when young: lamellae distant, broad, plane, short-decurrent, white: spores ovoid or ellipsoid, smooth, hyaline, 8–9 × 6 μ: stipe slender, whitish, pulverulent to glabrous, slightly enlarged at the base, 1 cm. long, scarcely 1 mm. thick.

Type collected on much decayed wood by a roadside in woods at Union Hill, 600 m. elevation, near Moneague, Jamaica, January 17, 18, 1909, *W. A. Murrill 1178* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Vicinity of Moneague, Jamaica.

22. **Omphalina collybiiformis** Murrill, sp. nov.

Pileus convex to umbilicate, rather tough, gregarious, 3 cm. broad; surface whitish with a satiny luster, glabrous, becoming striate from the cracking of the cuticle, margin concolorous, becoming reflexed and splitting with age: lamellae decurrent, distant, narrow, whitish: spores subglobose, smooth, hyaline, 4–7 μ: stipe cylindric, equal, tough, smooth, glabrous, whitish, hollow, 2–5 cm. long, 2–3 mm. thick.

Type collected on decayed wood in a moist virgin forest in the Tepeite Valley, near Cuernavaca, Mexico, 2100 m. elevation, December 28, 1909, *W. A. & Edna L. Murrill 477* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

23. **Omphalina jalapensis** Murrill, sp. nov.

Pileus deeply infundibuliform, gregarious, reaching 3.5 cm. broad and 2 cm. high; surface whitish, hygrophanous, smooth, glabrous, the margin lobed and irregular, not striate, incurved when young: context thin, white, flexible, inclined to be tough, fragile when dry; lamellae short-decurrent, determinate, crowded, narrow, rather thick, white, several times inserted and some of them forked: spores ovoid, smooth, hyaline, 5 × 3.5 μ: stipe somewhat compressed, dilated above, smooth, concolorous, pubescent at the base, hollow, 2 cm. long, 3–5 mm. thick.

Type collected on the ground in humus in a moist virgin forest near Jalapa, Mexico, December 12–20, 1909, *W. A. & Edna L. Murrill 165* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

24. **Omphalina lenta** Murrill, sp. nov.

Pileus rather tough, infundibuliform, gregarious, reaching 1 cm. broad; surface smooth, furfuraceous, pale-tan, margin incurved when young, concolorous: lamellae decurrent, narrow, rather thick, distant, yellowish: stipe cylindric, equal, very slender, pallid to subconcolorous, furfuraceous to glabrous, 2–3 cm. long, 1–1.5 mm. thick.

Type collected on a fallen dead stick at Hall's Delight, Jamaica, 500 m. elevation, October 25, 1902, *F. S. Earle 122* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

25. **Omphalina flavella** (Berk. & Curt.) Murrill.

Agaricus (Omphalia) flavellus Berk. & Curt. Jour. Linn. Soc. **10**: 286. 1868.
Omphalia flavella Sacc. Syll. Fung. **5**: 334. 1887.

Pileus thin, umbilicate to infundibuliform, gregarious, 1–1.5 cm. broad; surface glabrous, flavovirens when young, melleous when old, margin striate, incurved: lamellae decurrent, few, distant, arcuate, melleous: spores globose, smooth, hyaline, 4–7 μ: stipe slender, appressed,

slightly enlarged at the apex, puberulent, white when young, becoming melleous, 1–2 cm. long, 1–2 mm. thick.

TYPE LOCALITY: Cuba.
HABITAT: On dead sticks in woods.
DISTRIBUTION: Cuba, Jamaica, and eastern Mexico.

26. **Omphalina Earlei** Murrill, sp. nov.

Pileus thin, submembranous, convex to expanded, gregarious, 2–3 cm. broad; surface pallid to yellowish, silky to subglabrous, smooth, margin concolorous, not striate, inrolled when young: lamellae decurrent, narrow, distant, concolorous, forking and strongly interveined: stipe slightly dilated above, whitish, puberulent or pubescent, solid, 2–3 cm. long, 1 mm. thick.

Type collected on the ground under weeds and bushes at Herradura, Cuba, October 13, 1906. *F. S. Earle 551* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

27. **Omphalina cremea** Murrill, sp. nov.

Pileus hemispheric, gregarious, 2 cm. broad, 1 cm. high; surface smooth, glabrous, cream-colored, margin ochraceous, hygrophanous, undulate, deflexed: lamellae decurrent, distant, arcuate, rather thick, ochraceous: spores ovoid or broadly ellipsoid, obliquely apiculate at one end, smooth, hyaline, 8.5 × 6 μ: stipe slightly enlarged at the middle, smooth, glabrous, cream-colored, about 4.5 cm. long, 2–4 mm. thick.

Type collected on a very much decayed stump at Chester Vale, Jamaica, December 22, 1908, *W. A. & Edna L. Murrill 353* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

28. **Omphalina chondripes** (Berk. & Curt.) Murrill.

Agaricus (Omphalia) chondripes Berk. & Curt. Jour. Linn. Soc. **10**: 286. 1868.
Omphalia chondripes Sacc. Syll. Fung. **5**: 317. 1887.

Pileus thin, infundibuliform, about 1 cm. broad; surface umbrinous, margin involute: lamellae narrow, arcuate, decurrent, subdistant, white to pallid: spores globose, smooth, hyaline, 5–7.5 μ: stipe concolorous, cartilaginous, pulverulent to glabrous, 6–15 mm. long, 2 mm. thick.

TYPE LOCALITY: Cuba.
HABITAT: On decayed wood or other vegetable matter.
DISTRIBUTION: Cuba and British Honduras.

29. **Omphalina miniata** Murrill.

Agaricus (Omphalia) Kermesinus Berk. & Curt. Jour. Linn. Soc. **10**: 286. 1868. Not *A. Kermesinus* Müll.
Omphalia Kermesina Sacc. Syll. Fung. **5**: 320. 1887.

Pileus convex, umbilicate, 6 mm. broad; surface glabrous, bright-scarlet: lamellae decurrent, few, broad, concolorous: stipe glabrous, concolorous, dilated above, 18 mm. long.

TYPE LOCALITY: Cuba.
HABITAT: On rotten wood.
DISTRIBUTION: Known only from the type locality.

30. **Omphalina coccinea** Murrill.

Agaricus (Omphalia) sanguineus Berk. & Curt. Jour. Linn. Soc. **10**: 286. 1868. Not *A. sanguineus* Bull. 1780.
Omphalia sanguinea Sacc. Syll. Fung. **5**: 311. 1887.

Pileus thin, infundibuliform, 12 mm. broad; surface pruinose, blood-red: lamellae decurrent, crowded, narrow, concolorous: stipe concolorous, dilated above, 12 mm. long.

TYPE LOCALITY: Cuba.
HABITAT: On rotten wood.
DISTRIBUTION: Known only from the type locality.

31. **Omphalina incarnata** Murrill.

Agaricus (*Omphalia*) *carneolus* Fries, Nova Acta Soc. Sci. Upsal. III. 1: 23. 1851. Not *A. carneolus* Pers. 1828.
Omphalia carneola Sacc. Syll. Fung. 5: 323. 1887.

Pileus somewhat fleshy, convex to explanate and depressed, 2.5 cm. broad; surface incarnate: lamellae adnate-decurrent, distant, thick, paler than the pileus: stipe cartilaginous, straight or curved, equal, shining, glabrous, dark-red, stuffed, corneous, about 2.5 cm. long and 2 mm. thick.

TYPE LOCALITY: Naranjo, Costa Rico.
HABITAT: In moist earth.
DISTRIBUTION: Known only from the type locality.

DOUBTFUL SPECIES

Omphalia californica Copeland, Ann. Myc. **2**: 507. 1904. Described from specimens collected on the ground under oaks at Chico, California, and said by the author to be allied to *Omphalina umbellifera*. I have not seen the types. Pileus pale-brown, glabrous, becoming infundibuliform, 1–2 cm. broad; lamellae very broad behind, very unequal, triangular, rosy-pallid; spores about 4 × 3 μ; stipe glabrous, rosy-pallid, 1–2 cm. long, 2 mm. thick.

Omphalia Micheneri (Berk. & Curt.) Sacc. Syll. Fung. **5**: 344. 1887. (*Agaricus* (*Pleurotus*) *Micheneri* Berk. & Curt. Ann. Mag. Nat. Hist. II. **12**: 420. 1853.) Described from specimens collected on dead wood in Pennsylvania by Michener. The single specimen at Kew has the appearance of *Omphalina subclavata*, but the surface of Michener's plant is described as yellowish-white and the lamellae as distant.

Omphalia muralis (Sow.) Quél. Champ. Jura Vosg. 219. 1872. (*Agaricus muralis* Sow. Engl. Fungi *pl. 322*. 1801.) Reported from Ohio and the Carolinas. Specimens from Long Island agree fairly well with the description, except that they have a much thicker stipe. Specimens at Albany from California are only *O. subhepatica*.

Omphalia sphaerospora (Berk.) Sacc. Syll. Fung. **5**: 326. 1887. (*Agaricus* (*Omphalia*) *sphaerosporus* Berk. Jour. Linn. Soc. **17**: 14. 1880. Not *A. sphaerosporus* Kromb. 1836.) Described from specimens collected on moss in Greenland. I have seen no specimens and the description is entirely inadequate.

Omphalia sphagnicola (Berk.) P. Karst. Bidr. Finl. Nat. Folk **32**: 130. 1879. (*Agaricus* (*Omphalia*) *sphagnicola* Berk. in Smith, Engl. Fl. 5^2: 67. 1836.) Described from England and confused by some American mycologists with *O. Epichysium*, which grows both on dead wood and in sphagnum.

Omphalia tubaeformis Peck, Ann. Rep. N. Y. State Mus. **42**: 115 (19). 1889. Described from specimens collected on dead willow bark at Menands, New York. It is not to be found at Albany, and was not listed by Peck in *Omphalia* in his 45th Report, but was mentioned by him in 1900 as belonging to this genus.

Omphalina chrysoleuca (Fries) Quél. Ench. Fung. 42. 1886. (*Agaricus chrysoleucus* Fries, Syst. Myc. **1**: 167. 1821.) Reported from North Carolina by Curtis and Schweinitz. It is very closely related to *O. chrysophylla* Fries. *Agaricus chrysoleucus* Pers. is said to be a *Hygrophorus*.

Omphalina gracillima (Weinm.) Quél. Ench. Fung. 46. 1886. (*Agaricus gracillimus* Weinm. Fl. Ross. 121. 1836.) Reported from New York and Minnesota. It is a minute, white species and difficult to study. The Peck collection contains specimens from Sandlake and Worcester, with a good sketch.

Omphalina integrella (Pers.) Quél. Ench. Fung. 46. 1886. (*Agaricus integrellus* Pers. Ic. Myc. 54. 1800.) Reported from Pennsylvania, North Carolina, and Minnesota by the older mycologists and from Ohio by Morgan and Stover. It is a small, white, pellucid species with very narrow, rather obtuse lamellae. In 1889, Fayod separated this species from *Omphalia* because of its obtuse lamellae and used it as the type of his genus *Delicatula*.

Omphalina onisca (Fries) Quél. Ench. Fung. 43. 1886. (*Agaricus oniscus* Fries, Syst. Myc. **1**: 172. 1821.) Reported from Greenland, New England, and Ohio. Not seen at Albany.

Omphalina setipes (Fries) Quél. Ench. Fung. 45. 1886. (*Agaricus setipes* Fries, Obs. Myc. **2**: 162. 1818.) Reported from North Carolina by Curtis as occurring in sphagnum swamps.

Omphalina stellata (Hoffm.) Quél. Ench. Fung. 45. 1886. (*Agaricus stellatus* (Hoffm.) Fries, Syst. Myc. **1**: 163. 1821.) Reported from New York by Peck on dead logs and from Chicago, Illinois, by Moffatt in grassy places. There seems to be considerable confusion among mycologists regarding this species. Specimens at Albany from East Berne are very tiny, striate, and orange throughout in the dried condition.

Omphalina striaepilea (Fries) Quél. Ench. Fung. 43. 1886. (*Agaricus striaepileus* Fries, Monogr. Hymen. Suec. **2**: 291. 1863.) Reported by Peck as occurring in New York in a pale-gray form on sugar maple. Specimens at Albany from North Elba are now striate, and chestnut-fuliginous throughout.

Omphalina umbilicata (Schaeff.) Quél. Enc. Fung. 42. 1886. (*Agaricus umbilicatus* Schaeff. Fung. Bavar. **4**: Ind. 46. 1774.) Reported from Greenland by Berkeley. It has the general appearance of *O. chrysophylla* and also approaches *Clitocybe*.

36. **GYMNOPUS** Roussel, Fl. Calvados ed. 2. 62. 1806.

Agaricus § *Collybia* Fries, Syst. Myc. **1**: 129. 1821.
Collybia Quél. Champ. Jura Vosg. 56. 1872.
Lyophyllum P. Karst. Acta Soc. Faun. Fl. Fenn. **2**: 3. 1881.
Tephrophana Earle, Bull. N. Y. Bot. Gard. **5**: 427. 1909.
Collybidium Earle, Bull. N. Y. Bot. Gard. **5**: 428. 1909.

Pileus convex, the margin at first incurved, solitary, gregarious, or cespitose: lamellae adnate or adnexed, usually white or bright-colored, sometimes gray or blackish: spores hyaline: stipe central, smooth, or at times striate, usually slender, with cartilaginous cortex.

Type species, *Agaricus longipes* Bull.

I. SPECIES OCCURRING IN TEMPERATE NORTH AMERICA, EXCEPT THOSE CONFINED TO THE PACIFIC COAST

Pileus white, whitish, or pale-isabelline, sometimes darker on the disk.
Pileus entirely white or whitish, unchanging.
Pileus 4–6 mm. broad. — 1. *G. delicatellus.*
Pileus 6–15 mm. broad.
Pileus slightly umbilicate. — 2. *G. ludovicianus.*
Pileus obtuse or subumbonate.
Stipe tomentose, attached to a tuber. — 3. *G. tuberosus.*
Stipe glabrous, not attached to a tuber.
Lamellae persistently white or pallid. — 4. *G. albus.*
Lamellae becoming rusty-brown on drying. — 5. *G. microsporus.*
Pileus 3–5 cm. broad.
Pileus umbilicate. — 6. *G. pallidus.*
Pileus umbonate. — 7. *G. texensis.*
Pileus whitish or pale-isabelline, often varying in color or marked with a different color on the disk or elsewhere.
Pileus 2–4 mm. broad. — 8. *G. conigenoides.*
Pileus 1–4 cm. broad, rarely larger in *G. strictipes*.
Pileus differently colored on the disk.
Pileus whitish tinged with rose-color, dull-white on the disk. — 9. *G. Eatonae.*
Pileus whitish or smoky-white, brown or blackish on the disk. — 10. *G. nigrodiscus.*
Pileus not differently colored on the disk.
Pileus becoming imbricate-scaly. — 11. *G. squamiger.*
Pileus remaining glabrous.
Pileus umbilicate or becoming depressed.
Pileus becoming distinctly yellow on drying; odor not farinaceous. — 12. *G. flavescens.*
Pileus not becoming distinctly yellow; odor strongly farinaceous. — 13. *G. farinaceus.*
Pileus plane or convex.
Lamellae distant. — 14. *G. sinuatus.*
Lamellae crowded.
Stipe white, 4–6 mm. thick. — 15. *G. strictipes.*
Stipe pale-reddish-brown, 2–4 mm. thick. — 16. *G. virginianus.*
Pileus 5–10 cm. broad.
Stipe 5–10 cm. long.
Lamellae narrow, crowded. — 17. *G. carnosus.*
Lamellae broad, distant. — 18. *G. tenuifolius.*
Stipe 10–15 cm. long. — 19. *G. Glatfelteri.*
Pileus distinctly yellow.
Hymenophore decidedly cespitose.
Pileus umbonate, vitelline or croceous. — 20. *G. physcopodius.*
Pileus not umbonate, sulfur-yellow. — 21. *G. subsulphureus.*

Hymenophore not decidedly cespitose.
Pileus 1–4 cm. broad.
Surface glabrous, pale-ochraceous. 22. *G. cremoraceus.*
Surface subglabrous, yellow or yellow tinged with brown, becoming smoky-flavid. 23. *G. exsculptus.*
Surface floccose-pulverulent, yellow. 24. *G. chrysopeplus.*
Pileus 5–7 cm. broad.
Stipe 4–6 mm. thick; lamellae flavous. 25. *G. subflavifolius.*
Stipe 15 mm. thick; lamellae white. 26. *G. rugosoceps.*
Pileus fulvous, reddish, or reddish-brown.
Pileus 1–2.5 cm. broad.
Lamellae subdistant. 27. *G. agricola.*
Lamellae crowded.
Lamellae serrate on the edges. 28. *G. lentinoides.*
Lamellae not serrate on the edges.
Lamellae pale-cinnamon-colored, spinuliferous. 29. *G. lachnophyllus.*
Lamellae white, not spinuliferous. 30. *G. tortipes.*
Pileus 2.5–5 cm. broad.
Surface distinctly viscid, glabrous. 31. *G. velutipes.*
Surface not viscid, but densely tomentose. 32. *G. tenuipes.*
Surface neither viscid nor tomentose.
Lamellae denticulate or eroded on the edges.
Lamellae crowded; stipe 6–10 mm. thick. 33. *G. microspermus.*
Lamellae subdistant; stipe 4–6 mm. thick. 34. *G. hygrophoroides.*
Lamellae entire on the edges.
Hymenophore densely cespitose. 35. *G. acervatus.*
Hymenophore gregarious. 36. *G. dryophilus.*
Pileus 5–10 cm. broad. 37. *G. luxurians.*
Pileus some shade of gray, brown, or black.
Surface dry or slightly moist, entirely glabrous even under a lens.
Pileus umbilicate or becoming depressed.
Stipe 1–2 mm. thick; pileus 1–2.5 cm. broad.
Lamellae brownish-lilac. 38. *G. myriadophyllus.*
Lamellae grayish-white; stipe whitish at the base.
Pileus blackish-brown; spores subglobose. 39. *G. atratoides.*
Pileus dark-avellaneous; spores ellipsoid. 40. *G. maurus.*
Lamellae white: stipe fulvous at the base. 41. *G. detersibilis.*
Stipe 2–4 mm. thick; pileus 2.5–5 cm. broad.
Surface brownish when moist, whitish when dry; odor distinctly farinaceous. 42. *G. expallens.*
Surface livid-gray, becoming paler on drying. 43. *G. ignobilis.*
Surface dull-blackish-brown, brown when dry. 44. *G. atratus.*
Pileus convex or umbonate.
Pileus grayish-drab, darker on the umbo, margin striate; lamellae free, pale-ochraceous; stipe white, shining. 45. *G. discipes.*
Pileus not as above.
Pileus 0.5–2.5 cm. broad.
Lamellae dark-rosy-isabelline. 46. *G. Earleae.*
Lamellae brownish. 47. *G. fuscolilacinus.*
Lamellae white or pale-yellow.
Stipe 1–2.5 cm. long.
Lamellae narrow. 48. *G. uniformis.*
Lamellae broad. 49. *G. pilularius.*
Stipe 5–10 cm. long. 50. *G. familia.*
Pileus 3–6 cm. broad.
Lamellae narrow, crowded.
Pileus light-brown; stipe 2.5 mm. thick. 51. *G. Volkertii.*
Pileus fuliginous-brown; stipe 4–6 mm. thick. 52. *G. fuliginellus.*
Lamellae rather distant, broad. 53. *G. dentatus.*
Surface viscid or clothed with minute or conspicuous hairs or fibrils.
Surface viscid, glabrous.
Stipe 2–3 cm. long, not radicate. 54. *G. unakensis.*
Stipe 10–20 cm. long, radicate. 55. *G. radicatus.*
Surface dry, clothed with minute or conspicuous hairs or fibrils.
Pileus 8–12 mm. broad. 56. *G. albipilatus.*
Pileus 1.5–4 cm. broad.
Lamellae narrow, crowded; pileus avellaneous. 57. *G. oculus.*
Lamellae broad, subdistant; pileus dark-brown. 58. *G. alcalinolens.*
Pileus 7.5–10 cm. broad. 59. *G. platyphyllus.*

II. SPECIES OCCURRING ON THE PACIFIC COAST

Pileus white or whitish.
Hymenophore arising from a tuber. 3. *G. tuberosus.*
Hymenophore not arising from a tuber.
Lamellae narrow, crowded. 60. *G. trullisatus.*
Lamellae broad, distant. 61. *G. albogriseus.*
Pileus some shade of yellow or isabelline.

Pileus 1.5–2 cm. broad.
Pileus cremeous-melleous, umbilicate. — 62. *G. cremeimelleus.*
Pileus isabelline with a fulvous umbo. — 63. *G. fulvidiscus.*
Pileus 2.5–6 cm. broad.
Lamellae denticulate. — 64. *G. denticulatus.*
Lamellae not denticulate.
Lamellae white, not changing. — 65. *G. subrugosus.*
Lamellae yellow, changing to brownish-red on drying. — 23. *G. exsculptus.*

Pileus some shade of fulvous, bay, or reddish-brown.
Pileus with a distinct, conic umbo.
Stipe radicate, 5–15 cm. long. — 66. *G. umbonatus.*
Stipe not radicate, 4–5 cm. long. — 67. *G. badiialbus.*
Pileus convex or broadly umbonate.
Stipe glabrous.
Stipe 2–2.5 cm. long; pileus cespitose. — 68. *G. avellaneidiscus.*
Stipe 2.5–5 cm. long; pileus usually solitary or gregarious.
Spores ellipsoid. — 36. *G. dryophilus.*
Spores subglobose. — 69. *G. sublatericius.*
Stipe distinctly velvety.
Pileus distinctly viscid. — 31. *G. velutipes.*
Pileus not viscid. — 70. *G. fulvipes.*

Pileus avellaneous, fuliginous, or blackish. — 40. *G. maurus.*
Pileus umbilicate.
Pileus convex.
Pileus avellaneous; stipe 5 cm. long. — 71. *G. avellaneigriseus.*
Pileus fuliginous; stipe 2 cm. long. — 72. *G. griseifolius.*

III. SPECIES OCCURRING IN TROPICAL NORTH AMERICA

Pileus glabrous, not viscid.
Pileus white or whitish, sometimes differently colored on the disk.
Pileus entirely white.
Pileus 1–2 cm. broad. — 73. *G. musicola.*
Pileus 3–8 cm. broad.
Lamellae deeply sinuate, narrow, crowded. — 74. *G. Boryanus.*
Lamellae adnate, broad. — 75. *G. albidulus.*
Pileus white, differently colored on the disk.
Disk pale-yellowish; stipe 1.5 cm. long. — 76. *G. orizabensis.*
Disk latericious; stipe 6 cm. long. — 77. *G. oculatus.*
Pileus ochraceous, isabelline, or fulvous. (*G. dryophilus*, a temperate species found at high elevations in the tropics, may be looked for here.)
Pileus pale-ochraceous, 5–10 mm. broad. — 78. *G. marasmiiformis.*
Pileus dark-ochraceous, 1–3 cm. broad. — 79. *G. domesticus.*
Pileus isabelline with a pale-latericious umbo, 5 cm. broad. — 80. *G. monticola.*
Pileus fulvous.
Lamellae white.
Stipe 2–3 cm. long; pileus becoming fuliginous on drying. — 81. *G. nigritiformis.*
Stipe 1 cm. long; pileus remaining fulvous on drying. — 82. *G. densifolius.*
Lamellae brown. — 83. *G. fimetarius.*
Pileus blue. — 84. *G. cyanocephalus.*
Pileus avellaneous.
Lamellae white.
Pileus pale-avellaneous. — 85. *G. cinchonensis.*
Pileus reddish-brown. — 86. *G. subnivulosus.*
Lamellae pale-murinous. — 87. *G. subavellaneus.*
Pileus fuliginous. — 88. *G. nigrita.*
Pileus rosy-livid or dark-red.
Pileus rosy-livid, 12 mm. broad. — 89. *G. roseilividus.*
Pileus latericious, 7 mm. broad. — 90. *G. xuchilensis.*
Pileus bay to dark-reddish-brown, 2.5–5 cm. broad.
Species wood-loving; margin striate. — 91. *G. jamaicensis.*
Species growing on the ground; margin estriate. — 36. *G. dryophilus.*

Pileus decorated with hairs or scales or, if glabrous, then distinctly viscid.
Pileus viscid, tawny or reddish-yellow, cespitose. — 31. *G. velutipes.*
Pileus not viscid but decorated with hairs or scales.
Surface white with a floccose, subseparable pellicle. — 92. *G. subflavescens.*
Surface fuliginous, isabelline on the disk, beset with minute bristles. — 93. *G. setulosus.*
Surface orange, densely furfuraceous-velvety. — 24. *G. chrysopeplus.*
Surface ochraceous to yellowish-red, becoming bay or chestnut, densely tomentose when young. — 32. *G. tenuipes.*

1. **Gymnopus delicatellus** (Peck) Murrill.

Agaricus (*Collybia*) *delicatellus* Peck, Ann. Rep. N. Y. State Mus. **30**: 39. 1878.
Collybia delicatella Sacc. Syll. Fung. **5**: 224. 1887.

Pileus submembranous, convex or broadly campanulate, gregarious or subcespitose, 4–6 mm. broad; surface glabrous, pure-white: lamellae white, narrow but not crowded, emarginate:

spores oblong or narrowly ellipsoid, about 10 × 4–5 μ: stipe white, slightly white-villose at the base, slender, equal, hollow, 16–24 mm. long, about 1 mm. thick.

TYPE LOCALITY: North Greenbush, New York.
HABITAT: Among fallen leaves.
DISTRIBUTION: Known only from the type locality.

2. **Gymnopus ludovicianus** Murrill, sp. nov.

Pileus thin, rather tough, resembling *Marasmius*, convex to expanded, slightly umbilicate, gregarious or subcespitose, 1–1.5 cm. broad; surface glabrous, strongly rugose, pallid, margin concolorous, slightly striate, inflexed when young: lamellae adnate with a collar, distant, inserted, of moderate width, strongly interveined, white: spores globose, smooth, hyaline, granular, 4–6 μ: stipe cylindric, equal, firm, solid, smooth, glabrous, pallid above, reddish-brown at the base, 3–4 cm. long, 1–2 mm. thick.

Type collected in humus on the ground in wet woods in City Park, New Orleans, Louisiana, September 3, 1908, *F. S. Earle 26* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

3. **Gymnopus tuberosus** (Bull.) Murrill.

Agaricus tuberosus Bull. Herb. Fr. *pl. 256*. 1785.
Collybia tuberosa Quél. Champ. Jura Vosg. 60. 1872.

Pileus thin, convex or nearly plane, obtuse or slightly umbonate, 6–12 mm. broad; surface glabrous or nearly so, white: lamellae close, thin, adnate, white: spores ellipsoid, 5–6 × 3 μ: stipe slender, clothed with a thin, pulverulent, white tomentum, often nearly naked toward the apex, whitish or slightly reddish-tinted, growing from a yellowish or reddish-brown sclerotioid tuber of variable shape, 2–4 cm. long, scarcely 1 mm. thick.

TYPE LOCALITY: France.
HABITAT: On old blackened fungi, decayed sticks, or damp soil rich in decayed vegetable matter.
DISTRIBUTION: Canada to North Carolina and west to Washington, Oregon, and California; also in Europe.
ILLUSTRATIONS: Bull. Herb. Fr. *pl. 256, pl. 522, f. 4;* Cooke, Brit. Fungi *pl. 144 (197)A*.
EXSICCATI: Erb. Critt. Ital. Ser. II. *932;* Roum. Fungi Sel. *7312;* Thüm. Myc. Univ. *2103*.

4. **Gymnopus albus** (Peck) Murrill.

Collybia alba Peck, Ann. Rep. N. Y. State Mus. 41: 62. 1888.

Pileus thin, convex or hemispheric, obtuse, 6–10 mm. broad; surface glabrous, white: lamellae broad, subdistant, ventricose, adnexed or nearly free: spores broadly ellipsoid or subglobose, 4–5 × 3–4 μ: stipe glabrous, white, short, equal or slightly thickened at the apex, about 2.5 cm. long, 1–2 mm. thick.

TYPE LOCALITY: Gansevoort, New York.
HABITAT: On mossy decayed wood and stumps.
DISTRIBUTION: Northern New York.

5. **Gymnopus microsporus** (Peck) Murrill.

Collybia microspora Peck, Bull. Torrey Club 22: 486. 1895.

Pileus thin, convex, subumbonate, 12 mm. broad; surface glabrous, white: lamellae subdistant, nearly plane, white, changing to rusty-brown on drying: spores minute, broadly ellipsoid, 4 × 3 μ: stipe slender, glabrous, white, becoming brown on drying, hollow, 2.5 cm. long, 2 mm. thick.

TYPE LOCALITY: Rooks County, Kansas.
HABITAT: On wet ground under bushes.
DISTRIBUTION: Kansas.

6. **Gymnopus pallidus** Murrill, sp. nov.

Pileus convex-umbilicate, thin, gregarious, 3 cm. broad; surface dry, smooth, glabrous, hygrophanous, whitish, margin entire or undulate, not striate, white, inflexed when young: lamellae adnate, crowded, narrow, white: spores ellipsoid, smooth, hyaline, obliquely apiculate

at one end, 6.5–7 × 4–5 μ: stipe usually crooked, equal, smooth, glabrous, pallid, solid, 2–3 cm. long, 3–4 mm. thick.

Type collected among leaves in wet woods at West Park, New York, August 8, 1903, *F. S. Earle, 1792* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

7. **Gymnopus texensis** (Berk. & Curt.) Murrill.

Agaricus (Collybia) texensis Berk. & Curt. Ann. Mag. Nat. Hist. II. 12: 419. 1853.
Collybia texensis Sacc. Syll. Fung. 5: 203. 1887.

Pileus fleshy, subcampanulate, umbonate, connate-cespitose, 5 cm. or more broad; surface glabrous, whitish: lamellae sinuate-adnate, broad, ventricose, white: stipe velvety, spadiceous, 8 cm. long, 6 mm. thick.

TYPE LOCALITY: Texas.
DISTRIBUTION: Known only from the type locality.

8. **Gymnopus conigenoides** (Ellis) Murrill.

Agaricus (Collybia) conigenoides Ellis, Bull. Torrey Club 6: 76. 1876.
Collybia conigenoides Sacc. Syll. Fung. 5: 223. 1887.

Pileus thin, fleshy, convex-plane, not umbonate, 2–4 mm. broad; surface minutely pubescent, white to yellowish, margin pellucid-striate: lamellae heterophyllous, free, not crowded, 4–11 entire ones, white becoming yellow, pubescent on the edges: stipe slender, white, radicate, 2.5 cm. long.

TYPE LOCALITY: Newfield, New Jersey.
HABITAT: On magnolia fruits.
DISTRIBUTION: Known only from the type locality.

9. **Gymnopus Eatonae** Murrill, sp. nov.

Pileus convex, not fully expanding, not umbonate, gregarious, 1–2 cm. broad; surface smooth, dry, glabrous, whitish tinged with rose-color, dull-white on the disk, not fading in herbarium specimens, margin rose-tinted, incurved when young: lamellae adnate, crowded, narrow, white: spores ellipsoid, smooth, hyaline, 6–6.5 × 3–3.5 μ: stipe tough, subequal, smooth, glabrous, whitish, tinged with rose-color except at the base, 2–2.5 cm. long, about 2 mm. thick.

Type collected on a lawn with *Marasmius caryophylleus* in the New York Botanical Garden, October 2, 1911, *Mary E. Eaton* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

10. **Gymnopus nigrodiscus** (Peck) Murrill.

Collybia nigrodisca Peck, Ann. Rep. N. Y. State Mus. 50: 98. 1897.

Pileus thin, convex, 2.5–4 cm. broad; surface glabrous, whitish or smoky-white with a brown or blackish disk: context white; lamellae rather broad, subdistant, rounded behind, adnexed, whitish inclining to cream-yellow: spores subellipsoid, 6–7.5 × 4 μ: stipe pruinose, even or but slightly striate, whitish, equal, hollow, 2.5–4 cm. long, 4 mm. thick.

TYPE LOCALITY: Wading River, Suffolk County, New York.
HABITAT: In sandy soil.
DISTRIBUTION: Known only from the type locality.

11. **Gymnopus squamiger** Murrill, sp. nov.

Pileus hemispheric, umbilicate, solitary or gregarious, reaching 1.3 cm. broad; surface dry, dull-isabelline, at first smooth, becoming imbricate-scaly with age by the breaking up of the cuticle, margin concolorous, inflexed when young: lamellae squarely adnate, arcuate, distant, white: spores ellipsoid, slightly pointed at one end, smooth, hyaline, 7–8.5 × 5–6 μ: stipe tough, solid, compressed, concolorous, smooth, glabrous, pruinose at the apex, 2 cm. long, 2–3 mm. thick.

Type collected in good soil in open maple woods at Lake Placid, Adirondack Mountains, New York, July 17–29, 1912, *W. A. & Edna L. Murrill 40* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

12. **Gymnopus flavescens** Murrill, sp. nov.

Pileus fleshy, convex to expanded and at length depressed, somewhat eccentric or irregular at times, gregarious, 1–3 cm. broad; surface smooth, glabrous, hygrophanous, white or yellowish, becoming distinctly yellow on drying, margin concolorous, not striate, incurved when young: lamellae adnate, becoming sinuate with age, broad, crowded, white to yellowish: spores broadly ellipsoid, smooth, hyaline, 6–7 × 5–6 μ: stipe subequal, cylindric, whitish or yellowish, densely pruinose, floccose at the base, solid, 2–3 cm. long, 2–3 mm. thick.

Type collected on decayed wood in City Park, New Orleans, Louisiana, September 6, 1908, *F. S. Earle 68* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: City Park, New Orleans, Louisiana.

13. **Gymnopus farinaceus** Murrill, sp. nov.

Pileus convex, not fully expanding, umbilicate or depressed, gregarious or cespitose, reaching 3 cm. broad; surface smooth, glabrous, hygrophanous, dull-whitish or pale-isabelline, pruinose at the center, margin entire, concolorous, inflexed when young: context dull-whitish, with an exceedingly strong farinaceous odor; lamellae adnate, crowded, dull-grayish-white to brownish-discolored: spores ellipsoid, smooth, hyaline, 6–7 × 4–5 μ: stipe rather short, more or less compressed, tough, smooth, dry, glabrous, fumosous, 3 cm. long, 1–5 mm. thick.

Type collected in mossy, shaded earth about stumps and rocks in the New York Botanical Garden, October 5, 1911, *W. A. Murrill* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

14. **Gymnopus sinuatus** Murrill, sp. nov.

Pileus rather thick, convex to plane, not umbonate, solitary, 3–3.5 cm. broad; surface moist but not viscid, smooth, glabrous, estriate, dirty-cream-colored, margin entire, concolorous, inflexed when young: lamellae very broad, ventricose, distant, sinuate, whitish: spores ovoid, smooth, hyaline, granular, 8–10 × 6–7 μ: stipe erect, cylindric, equal, smooth, glabrous, cream-colored, hollow, whitish-tomentose at the base, 6 cm. long, about 7 mm. thick.

Type collected on humus under balsam trees at Lake Placid, Adirondack Mountains, New York, October 3–14, 1912, *W. A. & Edna L. Murrill 558* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

15. **Gymnopus strictipes** (Peck) Murrill.

Collybia strictipes Peck, Ann. Rep. N. Y. State Mus. **41**: 62. 1888.

Pileus thin, broadly convex or nearly plane, cespitose, 2.5–6 cm. broad; surface glabrous, sometimes slightly rugose on the disk, moist but scarcely hygrophanous, whitish or pale-yellow, paler when dry, often more deeply colored on the disk: lamellae thin, close, adnexed or almost free, white: spores ovoid or subellipsoid, pointed or subacuminate at one end, 6–7.5 × 4 μ· stipe glabrous, slightly mealy or pruinose at the apex, white, often with a dense, white, mycelioid tomentum at the base, equal, straight, hollow, 3–6 cm. long, 4–6 mm. thick.

TYPE LOCALITY: Catskill Mountains, New York.

HABITAT: Among leaves or on decayed wood in woods.

DISTRIBUTION: New England to the District of Columbia and west to Ohio.

16. **Gymnopus virginianus** Murrill, sp. nov.

Pileus convex to nearly plane, not umbonate, solitary or gregarious, 2.5–4 cm. broad; surface dry, smooth, glabrous, not shining, pale-isabelline, margin concolorous, estriate, inflexed when young: context white, without characteristic odor, eaten by snails; lamellae sinuate-adnexed, narrow, very crowded, white, plane: spores ellipsoid, smooth, hyaline, 5–6 × 3–4 μ: stipe slightly tapering upward, smooth, glabrous at the apex, finely whitish-tomentose at the base, pale-reddish-brown, hollow, 5–6 cm. long, 2–4 mm. thick.

Type collected in moist sandy soil in chestnut woods at Falls Church, Virginia, January 8, 1915, *W. A. Murrill* (herb. N. Y. Bot. Gard.).

HABITAT: In sandy soil or among leaves in chestnut or pine woods.

DISTRIBUTION: Vicinity of Falls Church, Virginia.

17. **Gymnopus carnosus** (Curt.) Murrill.

Agaricus carnosus Curt. Fl. Lond. fasc. 5: 71. 1777–87.
Agaricus maculatus Alb. & Schw. Consp. Fung. 186. 1805. Not *A. maculatus* Schaeff. 1774.
Agaricus (*Tricholoma*) *Limonium* Peck, Bull. Buffalo Soc. Nat. Sci. 1: 43. 1873.
Collybia maculata Quél. Champ. Jura Vosg. 330. 1873.

Pileus fleshy, firm, convex or nearly plane, 5–10 cm. broad; surface even, glabrous, white or whitish, sometimes varied with reddish spots or stains: context white; lamellae narrow, crowded, adnexed, sometimes nearly or quite free, white or whitish: spores subglobose, 4–6 μ, sometimes showing a slight apiculus at one end: stipe striate, white, generally stout, firm, equal or slightly swollen in the middle, commonly narrowed at the base and praemorsely radicate, often curved at the base, rarely slightly thickened and blunt, 5–10 cm. long, 6–12 mm. thick.

TYPE LOCALITY: England.
HABITAT: On the ground or on much decayed wood in woods.
DISTRIBUTION: Canada to North Carolina and west to Indiana; also in Europe.
ILLUSTRATIONS: Curt. Fl. Lond. fasc. 5: *f. 71;* Hussey, Ill. Brit. Myc. 2: *pl. 20;* Mycologia 6: *pl. 130;* Sow. Engl. Fungi *pl. 246*.

18. **Gymnopus tenuifolius** Murrill, sp. nov.

Pileus convex to plane, scarcely umbonate, very light in weight when dry, solitary or gregarious, 6–8 cm. broad; surface smooth, glabrous, hygrophanous, sordid-whitish or dull-isabelline, fuliginous on the disk because of a tendency to deliquesce, sometimes becoming entirely fuliginous on drying, margin concolorous, striate: context very thin, translucent in dried specimens; lamellae rounded behind, nearly free, distant, ventricose, very broad and exceedingly thin, pale-clay-colored, somewhat marbled when dry, becoming fuliginous in some specimens: spores ellipsoid, smooth, hyaline, 6–7 × 3–4 μ: stipe typically long, but quite short in Adirondack specimens, cylindric, hollow, smooth, glabrous, milk-white or grayish-white, usually about 8 cm. long and 1 cm. thick.

Type collected in deep leaf-mold in deciduous woods in the New York Botanical Garden, July 29, 1915, *W. A. Murrill* (herb. N. Y. Bot. Gard.).
HABITAT: Among leaves in woods.
DISTRIBUTION: New York.

19. **Gymnopus Glatfelteri** Murrill, sp. nov.

Pileus convex to subexpanded, gregarious to subcespitose, 5–8 cm. broad; surface glabrous, rivulose, white or pale-tawny, darker on the disk, which may be reddish-fulvous, margin pallid, striate when dry: context thin, white, with a tendency to deliquesce; lamellae sinuate-adnexed, broadest behind, pallid, subcrowded, with a tendency like the context to deliquesce: spores ellipsoid, smooth, hyaline, 6–7 × 4–5 μ: stipe very long, cylindric, equal, hollow, flexuous, becoming twisted, striate and pulverulent at the apex, slightly scurfy at the base, becoming glabrous, 10–15 cm. long, about 4 mm. thick.

Type collected among leaves in a deep ravine near St. Louis, Missouri, July 14, 1902, *N. M Glatfelter 888* (herb. N. Y. State Mus.).
DISTRIBUTION: Missouri and Ohio.

20. **Gymnopus physcopodius** (Mont.) Murrill.

Agaricus (*Collybia*) *physcopodius* Mont. Syll. Crypt. 107. 1856.
Collybia physcopodia Sacc. Syll. Fung. 5: 240. 1887.

Pileus subfleshy, campanulate to expanded, umbonate, cespitose, 3–4 cm. broad; surface glabrous, vitelline or croceous: lamellae sinuate-adnexed, crowded, linear-lanceolate, yellowish: spores hyaline, ovoid, 5 μ long: stipe smooth, not striate, concolorous, becoming brown when dry, hollow, with an ovoid, bulbous base, 2.5–4.5 cm. long, 2–6 mm. thick.

TYPE LOCALITY: Columbus, Ohio.
HABITAT: On the ground in woods.
DISTRIBUTION: Known only from the type locality.

21. **Gymnopus subsulphureus** (Peck) Murrill.

Collybia subsulphurea Peck, Bull. Torrey Club **34**: 345. 1907.

Pileus fleshy but thin, somewhat tough, reviving under the influence of moisture, broadly convex, often becoming centrally depressed, cespitose, 2.5–6 cm. broad; surface glabrous, sulfur-yellow, sometimes tinged with pink or pale-tan-color at the center: context hygrophanous, white when dry, the odor strong, fungoid; lamellae thin, narrow, crowded, rounded behind, adnexed or nearly free, pale-sulfur-colored or whitish: spores ellipsoid, 6 × 3 μ: stipe rather long, tough, glabrous, hollow, tapering downward, smooth when moist, striate-sulcate when dry, sulfur-colored or pallid, 5–12 cm. long, 2–6 mm. thick.

TYPE LOCALITY: Stockton, Kansas.
HABITAT: Among fallen leaves under oak trees.
DISTRIBUTION: Known only from the type locality.

22. **Gymnopus cremoraceus** (Peck) Murrill.

Agaricus (*Collybia*) *cremoraceus* Peck, Ann. Rep. N. Y. State Mus. **32**: 26. 1880.
Agaricus (*Collybia*) *esculentoides* Peck, Ann. Rep. N. Y. State Mus. **39**: 39. 1887.
Collybia ochroleuca Peck, Ann. Rep. N. Y. State Mus. **46**: 104 (24). 1893.

Pileus thin, submembranous, hemispheric or convex, umbilicate or centrally depressed, 1.5–2.5 cm. broad; surface glabrous, dry, subsilky, pale-ochraceous, margin sometimes wavy: context white, the taste bitter; lamellae broad, subdistant, emarginate, with a decurrent tooth, whitish: spores ellipsoid, 6–7.5 × 5 μ: stipe glabrous, concolorous, slender, equal, stuffed or hollow, 2.5–5 cm. long, 2–4 mm. thick.

TYPE LOCALITY: Shokan, New York.
HABITAT: On the ground in sandy soil in woods.
DISTRIBUTION: New York.

23. **Gymnopus exsculptus** (Fries) Murrill.

Agaricus exsculptus Fries, Epicr. Myc. **1**: 93. 1838.
?*Agaricus* (*Collybia*) *luteo-olivaceus* Berk. & Curt. Ann. Mag. Nat. Hist. III. **4**: 286. 1859.
Agaricus (*Collybia*) *coloreus* Peck, Bull. Buffalo Soc. Nat. Sci. **1**: 46. 1873.
Collybia exsculpta P. Karst. Bidr. Finl. Nat. Folk **32**: 156. 1879.
Agaricus (*Tricholoma*) *rubescentifolius* Peck, Ann. Rep. N. Y. State Mus. **39**: 38. 1887.

Pileus thin, convex or nearly plane, obtuse or subumbilicate, scattered or subcespitose, 1.2–3.5 cm. broad; surface subglabrous, hygrophanous, yellow or yellow tinged with red or brown becoming smoky-flavid, margin usually projecting: lamellae crowded, narrow, emarginate, adnexed, yellow or yellowish, changing to brownish-red in drying: spores subglobose or broadly ellipsoid, 4–5 μ: stipe equal, hollow, glabrous, sometimes slightly fibrillose or pruinose at the apex, concolorous, 2.5–5 cm. long, 2–4 mm. thick.

TYPE LOCALITY: Europe.
HABITAT: On decaying wood, especially of hemlock and pine.
DISTRIBUTION: Maine to Washington and south to North Carolina and Ohio; also in Europe.
ILLUSTRATIONS: Cooke, Brit. Fungi *pl. 268;* Fries, Ic. Myc. 1: *pl. 66, f. 3.*

24. **Gymnopus chrysopeplus** (Berk. & Curt.) Murrill.

Lentinus chrysopeplus Berk. & Curt. Jour. Linn. Soc. **10**: 301. 1868.
Agaricus scabriusculus Peck, Ann. Rep. N. Y. State Cab. **23**: 85. 1872.
Agaricus (*Tricholoma*) *lacunosus* Peck, Bull. Buffalo Soc. Nat. Sci. **1**: 43. 1873.
Omphalia scabriuscula Sacc. Syll. Fung. **5**: 336. 1887.
Collybia lacunosa Peck, Ann. Rep. N. Y. State Mus. **44**: 176 (64). 1891.

Pileus thin, broadly convex or expanded, 1.5–3 cm. broad; surface floccose-pulverulent, yellow, dry, shining, margin striate: lamellae usually adnate, rarely short-decurrent, interveined, distant, broad, white or pale-yellow: stipe equal or attenuate below, firm, minutely squamulose, concolorous, solid or stuffed, 3.5–5 cm. long, 2 mm. thick.

TYPE LOCALITY: Cuba.
HABITAT: On dead wood.
DISTRIBUTION: New England to Wisconsin and southward to Cuba; perhaps also in Brazil, Port Natal, and New Caledonia.

25. **Gymnopus subflavifolius** Murrill, sp. nov.

Pileus convex to expanded, becoming slightly depressed, rather thin, solitary, 6–7 cm. broad; surface smooth, glabrous, dry, ochroleucous to ochraceous, becoming striate and

brownish-discolored on the immediate margin: lamellae adnexed, crowded, narrow, more or less flavous: spores ellipsoid, smooth, hyaline, 6–7 × 3–4 μ: stipe equal, rather short, hollow, whitish, subglabrous, radicate, 5–7 cm. long, 4–6 mm. thick.

Type collected on dead coniferous wood at Lake Placid, Adirondack Mountains, New York, July 17–29, 1912, *W. A. & Edna L. Murrill 207* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

26. **Gymnopus rugosoceps** (Atk.) Murrill.

Collybia rugosoceps Atk. Jour. Myc. **8**: 112. 1902.

Pileus campanulate, 5 cm. broad; surface dull-smoky-yellow, darker at the center, strongly and deeply rugose: context white, thin, the odor and taste not marked; lamellae adnate, distant, broad, white: spores obovoid to subellipsoid, smooth, white, 8–11 × 7–9 μ: stipe furrowed, ventricose, with a short root, white, dusky at the base, spongy within, thin, hollow, with a cartilaginous rind, 8 cm. long, 1.5 cm. thick.

TYPE LOCALITY: Ithaca, New York.
HABITAT: On the ground in woods.
DISTRIBUTION: New York.

27. **Gymnopus agricola** Murrill, sp. nov.

Pileus small, rather tough, convex, not fully expanding, not umbonate, gregarious to slightly cespitose, 1–2 cm. broad; surface dry, smooth, glabrous, fulvous when moist, paler when dry, margin entire, not striate, stramineous, inflexed when young: context thin, white, with nutty flavor; lamellae adnexed or sinuate, subdistant, of medium breadth, watery-white: spores pip-shaped, smooth, hyaline, 5–6 × 3–4 μ: stipe slender, tapering downward, pale-brownish above, reddish-brown below, hollow or stuffed, cartilaginous, 2–3 cm. long, 1.5–2 mm. thick.

Type collected in soil among grass in an open field in the New York Botanical Garden, May 23, 1910, *W. A. Murrill* (herb. N. Y. Bot. Gard.).
HABITAT: Among grass or weeds in fields.
DISTRIBUTION: Southern New York and New Jersey.
ILLUSTRATION: Mycologia **3**: *pl. 40, f. 8* (as *Collybidium dryophilum*).

28. **Gymnopus lentinoides** (Peck) Murrill.

Agaricus (*Collybia*) *lentinoides* Peck, Ann. Rep. N. Y. State Mus. **32**: 27. 1880.

Pileus thin, convex or nearly plane, obtuse, 1.2–2.5 cm. broad; surface glabrous, hygrophanous, reddish-brown or yellowish-red when moist, reddish-tan-colored or pale-red when dry: lamellae narrow, close, adnexed, serrate on the edges, white: spores ellipsoid, 6–7.5 × 4 μ: stipe equal, even or slightly striate, slightly pruinose at the apex, white or whitish, rarely reddish-yellow, hollow, 3.5–5 cm. long, about 2 mm. thick.

TYPE LOCALITY: Montgomery County, New York.
HABITAT: On damp ground in a wooded swamp.
DISTRIBUTION: Massachusetts and New York.

29. **Gymnopus lachnophyllus** (Berk.) Murrill.

?*Agaricus cohaerens* Pers. Syn. Fung. 306. 1801. Not *A. cohaerens* Lasch,
Agaricus (*Collybia*) *lachnophyllus* Berk. Lond. Jour. Bot. **6**: 312. 1847.
Agaricus (*Collybia*) *spinuliferus* Peck, Ann. Rep. N. Y. State Mus. **24**: 62. 1872.
Collybia lachnophyllus Sacc. Syll. Fung. **5**: 203. 1887.

Pileus fleshy, thin, convex or nearly plane, cespitose, 1.5–2.5 cm. broad; surface glabrous, hygrophanous, reddish-tan-colored tinged with pink when moist, paler when dry, margin slightly striatulate: lamellae narrow, close, rounded behind and free, pale-cinnamon-colored, spiniferous: spores ellipsoid or nearly so, 6–7.5 × 4 μ: stipe slender, tough, glabrous, hollow, shining and purplish-brown, often paler or whitish and subvelvety at the apex, especially in young plants, with a whitish mycelioid tomentum at the base, 4–6 cm. long, about 2 mm. thick.

TYPE LOCALITY: Waynesville, Ohio.
HABITAT: On rotten pieces of wood or on the ground among dead leaves in woods.
DISTRIBUTION: Connecticut, New York, New Jersey, Pennsylvania, Virginia, North Carolina, Ohio, and Michigan.

30. **Gymnopus tortipes** Murrill, sp. nov.

Pileus convex to subexpanded, broadly umbonate, thin, rather tough, cespitose, 1–1.5 cm. broad; surface smooth, glabrous, not striate, pale-reddish-brown, darker on the disk, margin entire, concolorous, inflexed when young: lamellae sinuate, crowded, rather broad, inserted, white: spores ellipsoid, smooth, hyaline, slightly curved on one side, 6–7 × 3–4 μ: stipe slender, equal, smooth, whitish-pruinose to subglabrous, subconcolorous, hollow, much twisted on drying, 3–4 cm. long, 1–2 mm. thick.

Type collected at the base of a stump near Auburn, Alabama, October 12, 1900, *F. S. Earle* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

31. **Gymnopus velutipes** (Curt.) Murrill.

Agaricus velutipes Curt. Fl. Lond. fasc. 4: *pl. 42*. 1777–87.
Collybia velutipes Quél. Champ. Jura Vosg. 59. 1872.

Pileus fleshy, rather thin, convex or nearly plane, obtuse, commonly cespitose, 2.5–5 cm. broad; surface glabrous, viscid, reddish-yellow or tawny, sometimes yellow on the margin and brownish on the disk, margin often wavy or irregular, thin: lamellae broad, subdistant, rounded behind, slightly adnexed, whitish or yellowish: spores narrowly ellipsoid or oblong-ellipsoid, 7.5–9 × 4 μ: stipe firm, externally cartilaginous, brown or tawny-brown, paler above, densely velvety-hairy, stuffed or hollow, 2.5–5 cm. long, 2–6 mm. thick.

TYPE LOCALITY: England.

HABITAT: On decaying wood and at the base of trunks of elm, willow, and other deciduous trees.

DISTRIBUTION: Eastern United States to Iowa and Kansas; Oregon; Orizaba and the Tepeite Valley in Mexico; also in Europe.

ILLUSTRATIONS: Ann. Rep. N. Y. State Mus. **51**: *pl. 50, f. 14, 15;* Bull. U. S. Dept. Agric. **175**: *pl. 15, f. 3;* Curt. Fl. Lond. fasc. 4: *pl. 42;* Hard, Mushrooms *f. 88;* Hussey, Ill. Brit. Myc. 1: *pl. 56;* Lloyd, Myc. Notes **5**: 41, *f. 13;* Mem. N. Y. State Mus. **3**: *pl. 47, f. 10–15;* Mycologia **1**: *pl. 3, f. 6;* Sow. Engl. Fungi *pl. 384*.

EXSICCATI: Allesch. & Schn. Fungi Bavar. *435;* Cavara, Fungi Longob. *17;* Desmaz. Pl. Crypt. Fr. *525, 2154;* Ellis & Ev. N. Am. Fungi *3001;* Herpell, Präp. Hutpilze *19, 38;* Jacz. Fungi Rossiae *235;* Krieger, Fungi Sax. *484;* Roum. Fungi Sel. *6169;* Sacc. Myc. Ven. *1105;* Westend. Herb. Crypt. Belge *1087*.

32. **Gymnopus tenuipes** (Schw.) Murrill.

Agaricus tenuipes Schw. Trans. Am. Phil. Soc. II. **4**: 147. 1822.
Agaricus (*Dermocybe*) *Hilairianus* Mont. Ann. Sci. Nat. II. **8**: 366. 1837.
Agaricus rheicolor Berk. & Curt. Ann. Mag. Nat. Hist. **3**: 376. 1839.
Agaricus (*Collybia*) *cayennensis* Mont. Ann. Sci. Nat. IV. **1**: 94. 1854.
Marasmius rhabarbarinus Berk. Jour. Bot. & Kew Misc. **8**: 135. 1856.
Marasmius amabilipes Peck, Bot. Gaz. **4**: 216. 1879.
Agaricus cerinus Morgan, Trans. Cinc. Soc. Nat. Hist. **6**: 66. 1883. Not *Agaricus cerinus* Pers. 1801.
Collybia tenuipes Sacc. Syll. Fung. **5**: 213. 1887.
Agaricus (*Collybia*?) *aurantiellus* Speg. Fungi Guar. Pug. **16**. 244. 1883.

Pileus thin, subtranslucent, convex to plane or slightly depressed, solitary or gregarious, 2–5 cm. broad; surface ochraceous to yellowish-red and finely and densely tomentose when young, becoming bay or chestnut and glabrous, rugose on the disk, margin concolorous, striate, not inflexed on drying: lamellae adnate with a short tooth, of medium width, crowded, interveined, subventricose, flavous: spores ellipsoid, smooth hyaline, 5–7 × 3–4 μ: stipe equal, flavous or ferruginous to brownish, densely and persistently velvety-tomentose its entire length, 4–7 cm. or more long, 2–4 mm. thick.

TYPE LOCALITY: Bethlehem, Pa.

HABITAT: On dead wood.

DISTRIBUTION: Ontario, New York, Pennsylvania, Missouri, Wisconsin, Minnesota, Ohio, Colorado, Florida, Cuba, Haïti, Porto Rico, Guadeloupe, Martinique, Dominica, British Honduras, Mexico, and Costa Rica; also in Venezuela, Guiana, and Brazil.

33. **Gymnopus microspermus** (Peck) Murrill.

Lentinus microspermus Peck, Bull. Torrey Club **33**: 216. 1906.

Pileus fleshy, thin, somewhat irregular, convex, cespitose, 2.5–5 cm. broad; surface glabrous, reddish-brown: lamellae adnexed, close, thin, emarginate, eroded, denticulate, white, becoming creamy-yellow: spores minute, globose, hyaline or tinged with yellow, 3–4 μ: stipe fleshy-fibrous, sometimes eccentric, equal, glabrous, white or whitish, hollow, 5–6 cm. long, 6–10 mm. thick.

TYPE LOCALITY: Crêve Coeur, Missouri.

HABITAT: On decayed wood.

DISTRIBUTION: Known only from the type locality.

34. **Gymnopus hygrophoroides** (Peck) Murrill.

Agaricus (Collybia) hygrophoroides Peck, Ann. Rep. N. Y. State Mus. **32**: 26. 1880.
Collybia hygrophoroides Peck, Ann. Rep. N. Y. State Mus. **49**: 51. 1897.

Pileus subconic, becoming convex or nearly plane, scattered or subcespitose, 2.5–3.5 cm. broad; surface glabrous, hygrophanous, reddish or yellowish-red when moist, paler when dry: lamellae broad, subdistant, rounded behind or deeply emarginate, eroded on the edges, whitish: stipe striate, whitish, equal, stuffed or hollow, 5–7.5 cm. long, 4–6 mm. thick.

TYPE LOCALITY: Knowersville, New York.
HABITAT: On decaying half-buried wood.
DISTRIBUTION: New York and Michigan.
ILLUSTRATIONS: Bull. N. Y. State Mus. 1[2]: *pl. 2, f. 23–26.*

35. **Gymnopus acervatus** (Fries) Murrill.

Agaricus acervatus Fries, Syst. Myc. **1**: 122. 1821.
Collybia acervata P. Karst. Bidr. Finl. Nat. Folk. **32**: 154. 1879.
Collybia simillima Peck, Ann. Rep. N. Y. State Mus. **42**: 115 (19). 1889.

Pileus fleshy but thin, convex or nearly plane, obtuse, densely cespitose, 2.5–5 cm. broad; surface glabrous, hygrophanous, pale-tan-color or dingy-pinkish-red when moist, paler or whitish when dry, margin commonly striatulate when moist: lamellae narrow, close, adnexed or free, whitish or tinged with flesh-color: spores ellipsoid, 6 × 3–4 μ: stipe slender, rigid, hollow, glabrous, reddish, reddish-brown, or brown, often whitish at the apex, especially when young, commonly with a white mycelioid tomentum at the base, 5–7.5 cm. long, about 2 mm. thick.

TYPE LOCALITY: Europe.
HABITAT: On decaying wood and on the ground among fallen leaves in woods.
DISTRIBUTION: New York to North Carolina and west to Ohio and Wisconsin.
ILLUSTRATIONS: Cooke, Brit. Fungi *pl. 267 (205)*; Fries, Ic. Myc. **1**: *pl. 64, f. 2;* Hard, Mushrooms *f. 87.*
EXSICCATI: Cavara, Fungi Longob. *217.*

36. **Gymnopus dryophilus** (Bull.) Murrill.

?*Agaricus melleus* Schaeff. Fung. Bavar. **4**: Ind. 20. 1774.
Agaricus dryophilus Bull. Herb. Fr. *pl. 434.* 1789.
Collybia dryophila Quél. Champ. Jura Vosg. 61. 1872.

Pileus thin, convex or nearly plane, sometimes with the margin elevated, irregular, obtuse, commonly gregarious, 2.5–5 cm. broad; surface glabrous, varying in color, commonly some shade of bay-red or tan-color: context white, edible; lamellae narrow, crowded, adnexed or almost free, white or whitish, rarely yellowish: spores ellipsoid, 6–7.5 × 3–4 μ: stipe glabrous, yellowish or rufescent, commonly similar in color to the pileus, equal or sometimes thickened at the base, cartilaginous, hollow, 2.5–5 cm. long, 2–4 mm. thick.

TYPE LOCALITY: France.
HABITAT: In woods, groves, and open places.
DISTRIBUTION: Greenland to Alabama and west to the Pacific coast, and in eastern Mexico; also in Europe.
ILLUSTRATIONS: Bull. Herb. Fr. *pl. 434;* Bull. U. S. Dept. Agric. **175**: *pl. 15, f. 2;* Sow, Engl. Fungi *pl. 127.*
EXSICCATI: Clements, Crypt. Form. Colo. *355, 356;* Ellis & Ev. N. Am. Fungi *2801;* Herpell, Präp. Hutpilze *39;* Rab. Fungi Eur. *2101;* Roum. Fungi Sel. *5308;* Shear, N. Y. Fungi *104;* Sydow, Myc. Mar. *2307; 2502.*

37. **Gymnopus luxurians** (Peck) Murrill.

Collybia luxurians Peck, Bull. Torrey Club **24**: 141. 1897.
Collybidium luxurians Murrill, Mycologia **3**: 169. 1911.

Pileus convex to expanded, obtuse or umbonate, cespitose, 5–10 cm. broad; surface dry, faintly radiate-striate but not fibrillose, fulvous, with bay umbo, irregular with undulate margin: context somewhat tough but easily torn, the odor pleasant, the taste sweetish; lamellae sinuate, arcuate, rather close, narrow, crenulate, pallid, becoming discolored: spores oblong-ellipsoid, smooth, hyaline, 6–8 × 3–4 μ: stipe twisted, curved, slightly enlarged below, hollow, cartilaginous, pruinose, pallid above, tinged with fulvous below, 7–12 cm. long, 4–9 mm. thick.

TYPE LOCALITY: Auburn, Alabama.
HABITAT: On humus or dead wood in moist, shaded places.
DISTRIBUTION: New York, Tennessee, Alabama, and Mississippi.
ILLUSTRATION: Mycologia **3**: *pl. 49, f. 7.*

38. **Gymnopus myriadophyllus** (Peck) Murrill.

Agaricus (Collybia) myriadophyllus Peck, Bull. Buffalo Soc. Nat. Sci. **1**: 47. 1873.
Collybia myriadophylla Sacc. Syll. Fung. **5**: 236. 1887.

Pileus very thin, broadly convex, plane or centrally depressed, sometimes umbilicate, scattered or somewhat cespitose, 1.5–2.5 cm. broad; surface hygrophanous, brown when moist, pale-ochraceous or tan-colored when dry: lamellae very numerous, narrow, linear, crowded, rounded behind or slightly adnexed, brownish-lilac: spores minute, broadly ellipsoid, 3–4 × 2.5 μ: stipe slender, but commonly short, equal, glabrous, stuffed or hollow, reddish-brown, 2.5–3.5 cm. long, 1 mm. thick.

TYPE LOCALITY: Portville, New York.
HABITAT: On decaying wood and mossy humus in woods.
DISTRIBUTION: New York; reported from Massachusetts, Ohio, and Wisconsin.

39. **Gymnopus atratoides** (Peck) Murrill.

Agaricus (Collybia) atratoides Peck, Ann. Rep. N. Y. State Mus. **32**: 27. 1880.
Collybia atratoides Peck, Ann. Rep. N. Y. State Mus. **49**: 53. 1897.

Pileus thin, convex, subumbilicate, gregarious or subcespitose, 1.2–2 cm. broad; surface glabrous, hygrophanous, blackish-brown when moist, grayish-brown and shining when dry: lamellae rather broad, subdistant, adnate, grayish-white, often transversely veiny above and venosely connected: spores nearly globose, about 5 μ: stipe equal, hollow, glabrous, grayish-brown with a whitish mycelioid tomentum at the base, about 2.5 cm. long, 1–2 mm. thick.

TYPE LOCALITY: Gansevoort, New York.
HABITAT: On decaying wood and mossy sticks in woods.
DISTRIBUTION: Maine and New York.

40. **Gymnopus maurus** (Fries) Murrill.

Agaricus maurus Fries, Syst. Myc. **1**: 168. 1821.
Omphalia maura P. Karst. Bidr. Finl. Nat. Folk **32**: 127. 1879.

Pileus thin, umbilicate, gregarious, 1.5–3 cm. broad; surface glabrous, hygrophanous, somewhat striate, dark-avellaneous, paler when dry, margin incurved when young, entire, concolorous: lamellae adnate or slightly decurrent, crowded, ashy-white, arcuate: spores ellipsoid, smooth, hyaline, 5–7 × 3–4 μ: stipe short, rigid, subequal, smooth, glabrous, concolorous, 2.5–5 cm. long, 1–2 mm. thick.

TYPE LOCALITY: Europe.
HABITAT: In sandy soil, usually on burnt ground or on charcoal.
DISTRIBUTION: New England, New York, and west to Washington; also in Europe.
ILLUSTRATION: Fries, Ic. Myc. *pl. 73, f. 2.*

41. **Gymnopus detersibilis** (Berk. & Curt.) Murrill.

Agaricus (Collybia) detersibilis Berk. & Curt. Ann. Mag. Nat. Hist. II. **12**: 419. 1853.
Collybia detersibilis Sacc. Syll. Fung. **5**: 247. 1887.

Pileus plane, umbilicate, gregarious to subcespitose, 12–25 mm. broad; surface glabrous, whitish to subfuliginous, margin striatulate: lamellae adnate, crowded, whitish: stipe pruinose, concolorous, fulvous at the base, contorted, compressed, dilated above, solid, 2.5 cm. or more long, 2 mm. thick.

TYPE LOCALITY: South Carolina.
HABITAT: On grass roots in sandy soil.
DISTRIBUTION: North Carolina and South Carolina.

42. **Gymnopus expallens** (Peck) Murrill.

Collybia expallens Peck, Ann. Rep. N. Y. State Mus. **44**: 130 (18). 1891.

Pileus thin, broadly convex or nearly plane, sometimes centrally depressed, 2.5–5 cm. broad; surface glabrous, hygrophanous, brownish when moist, whitish when dry, margin thin,

striatulate when moist: context whitish when dry, the odor distinct, farinaceous; lamellae rather broad, subdistant, rounded behind, adnexed, whitish, subcinereous, or dingy-yellowish: spores broadly ellipsoid, 5 × 4 μ: stipe short, hollow, equal or slightly thickened at the base, 2.5–3.5 cm. long, about 4 mm. thick.

TYPE LOCALITY: Salamanca, Cattaraugas County, New York.
HABITAT: Among fallen pine leaves in woods.
DISTRIBUTION: Known only from the type locality.

43. **Gymnopus ignobilis** (P. Karst.) Murrill.

Collybia ignobilis P. Karst. Bidr. Finl. Nat. Folk. **32**: 160. 1879.

Pileus slightly fleshy or membranous, slightly convex or plane with the disk slightly depressed, 1–2.5 cm. broad; surface glabrous, livid when moist, with a grayish reflection and the spreading margin obsoletely striatulate, grayish or pallid when dry: lamellae close, dingy or pale, emarginate: spores ellipsoid, guttulate, hyaline, 7–8 × 4 μ: stipe equal, hollow, livid or pallid with a grayish or whitish, floccose pruinosity, 2.5–6 cm. long, 2–4 mm. thick.

TYPE LOCALITY: Finland.
HABITAT: On the ground in coniferous woods.
DISTRIBUTION: New York; also in Europe. Reported from Chicago, Illinois.

44. **Gymnopus atratus** (Fries) Murrill.

Agaricus atratus Fries, Obs. Myc. **2**: 215. 1818.
Collybia atrata Quél. Champ. Jura Vosg. 331. 1873.

Pileus thin, fleshy, convex, becoming umbilicate, 2.5–5 cm. broad; surface smooth, shining, glabrous, dull-blackish-brown, brown when dry, margin inflexed when young, entire to undulate or lobed, concolorous: lamellae adnate or adnexed, many times inserted, crowded, rather broad, grayish-white: spores ellipsoid, smooth, hyaline, 6 × 4 μ: stipe short, equal, smooth, glabrous, brown within and without, hollow or stuffed, 2–3 cm. long, 2–4 mm. thick.

TYPE LOCALITY: Europe.
HABITAT: On dry earth among grass or bushes, often on burnt ground.
DISTRIBUTION: New York to Ohio and Mexico; also in Europe.
ILLUSTRATIONS: Fries, Ic. Myc. *pl. 70, f. 1;* Hard, Mushrooms *f. 83.*

45. **Gymnopus discipes** (Clements) Murrill.

Collybia discipes Clements, Bot. Surv. Neb. **4**: 19. 1896.

Pileus subcarnose, convex, at length explanate, the umbo wide; surface grayish-drab, glabrous, even, the umbo darker, grayish-brown, margin striate: lamellae free, remote, crowded, ventricose, pale-ochraceous: spores ellipsoid or ovoid, granular within, 5–6 × 3–4 μ: stipe cartilaginous, arising from a hypogaeous disk, glabrous, shining, white, stuffed.

TYPE LOCALITY: Beatrice, Nebraska.
HABITAT: On damp ground.
DISTRIBUTION: Known only from the type locality.

46. **Gymnopus Earleae** Murrill, sp. nov.

Pileus rather fleshy, convex to subexpanded, cespitose, reaching 2.5 cm. broad; surface moist, smooth, glabrous, dark-brown when young, fading with age or on drying, subzonate at times; margin estriate, incurved and whitish-tomentose when young, becoming glabrous with age: context slightly unpleasant to the taste; lamellae almost free, inserted, crowded, dark-rosy-isabelline: stipe equal or slightly tapering upward, often compressed, whitish-tomentose to subglabrous, concolorous, the base enlarged and clothed with a tuft of long, strigose, reddish-yellow hairs, 2.5–4 cm. long, 2–4 mm. thick.

Type collected among pine needles, twigs, and chips on moist ground in a creek bottom near Auburn, Alabama, April 22, 1900, *Mrs. F. S. Earle* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

47. **Gymnopus fuscolilacinus** (Peck) Murrill.

Agaricus (*Collybia*) *fuscolilacinus* Peck, Ann. Rep. N. Y. State Mus. **39**: 38. 1887.
Collybia fuscolilacina Peck, Ann. Rep. N. Y. State Mus. **49**: 53. 1897.

Pileus thin, convex, 8–16 mm. broad; surface glabrous, hygrophanous, even and brown when moist, lilac-brown and rugose when dry: lamellae close, ventricose, adnexed, brownish:

spores subglobose or broadly ellipsoid, 4–5 μ: stipe slender, flexuous, hollow, colored like the pileus, mealy or pruinose at the apex, with a whitish villosity at the base, 3.5–7.5 cm. long, about 2 mm. thick.

TYPE LOCALITY: Forge, Adirondack Mountains, New York.
HABITAT: Among mosses and fallen leaves in open places in woods.
DISTRIBUTION: Adirondack Mountains, New York.

48. **Gymnopus uniformis** (Peck) Murrill.

Collybia uniformis Peck, Ann. Rep. N. Y. State Mus. **50**: 98. 1897.

Pileus thin, hemispheric or convex, cespitose, 6–12 mm. broad; surface glabrous, hygrophanous, grayish-brown when moist, paler and pruinose when dry, margin thin, even, at first involute or strongly incurved: lamellae narrow, crowded, rounded behind, nearly free, whitish: spores minute, subglobose, 3–4 μ: stipe glabrous or slightly pruinose, equal, grayish-brown, with a slight, white, mycelioid tomentum at the base, hollow, about 2.5 cm. long and 2 mm. thick.

TYPE LOCALITY: Saranac Lake, New York.
HABITAT: Among mosses on much decayed wood.
DISTRIBUTION: New York.
ILLUSTRATIONS: Bull. N. Y. State Mus. **67**: *pl. M, f. 7–16*.

49. **Gymnopus pilularius** (Mont.) Murrill.

Agaricus (*Collybia*) *pilularius* Mont. Syll. Crypt. 108. 1856.
Collybia pilularia Sacc. Syll. Fung. **5**: 214. 1887.

Pileus fleshy, hemispheric, cespitose, 12–15 × 6–8 mm.; surface smooth, brown: lamellae adnate with a decurrent tooth, broad, pale-ochraceous: spores globose, 4 μ: stipe incurved, fragile, hollow, paler than the pileus, the base compressed, decurrent, flocculose, becoming striate when dry, 1–2 cm. long.

TYPE LOCALITY: Columbus, Ohio.
HABITAT: On rotten wood.
DISTRIBUTION: Known only from the type locality.

50. **Gymnopus familia** (Peck) Murrill.

Agaricus familia Peck, Ann. Rep. N. Y. State Cab. **23**: 79. 1872.
Collybia familia Sacc. Syll. Fung. **5**: 241. 1887.

Pileus thin, rather fragile, convex or hemispheric, densely cespitose, 12–24 mm. broad; surface glabrous, somewhat hygrophanous, whitish, yellowish-gray, or brownish, sometimes darker or brown on the disk: lamellae narrow, close, rounded at the inner extremity and almost free, white: spores globose, 4–5 μ: stipe slender, glabrous, minutely pruinose-pubescent under a lens, hollow, white or whitish, commonly with a white, mycelioid villosity at the base, 5–10 cm. long, about 2 mm. thick.

TYPE LOCALITY: North Elba, New York.
HABITAT: On much decayed wood and prostrate trunks of hemlock trees in woods.
DISTRIBUTION: New York.
ILLUSTRATIONS: Bull. N. Y. State Mus. **75**: *pl. 84, f. 1–7;* N. Marsh. Mushr. Book, facing p. 67.

51. **Gymnopus Volkertii** Murrill, sp. nov.

Pileus convex to expanded, umbonate at first, often becoming depressed around the umbo, solitary, 3–4 cm. broad; surface glabrous, dry, minutely radiate-striatulate, uniformly light-brown, margin concolorous, estriate, inflexed when young, becoming uneven, cracked and upturned with age: context very thin, white, without characteristic taste or odor; lamellae adnexed, narrow, very much crowded, ventricose, white, several times inserted: spores ellipsoid, slightly pointed at one end, smooth, hyaline, 7–8.5 × 5–6 μ: stipe cylindric, equal, cartilaginous, hollow, smooth, glabrous, polished, milk-white at the apex, subconcolorous with the pileus below, 3 cm. long, 2.5 mm. thick.

Type collected on a lawn under an oak on buried dead sticks, acorns, and grass roots, near the New York Botanical Garden, July 31, 1911, *E. C. Volkert* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Vicinity of New York City.
ILLUSTRATION: Mycologia 4: *pl. 68, f. 3* (as *Collybidium dryophilum*).

52. **Gymnopus fuliginellus** (Peck) Murrill.

Collybia fuliginella Peck, Ann. Rep. N. Y. State Mus. **40**: 53. 1888.

Pileus convex or nearly plane, 3.5–6 cm. broad; surface glabrous, even, fuliginous-brown, margin irregular or undulate: context white; lamellae rather narrow, close, rounded behind, adnexed or nearly free, white: spores subellipsoid, 7.5–8.7 × 5–6 μ, usually containing a single large nucleus: stipe colored like the pileus or a little paler, with a white tomentum at the base, subfibrillose, equal or slightly tapering upward, 3–5 cm. long, 4–6 mm. thick.

TYPE LOCALITY: Elizabethtown, Essex County, New York.
HABITAT: Under or near arbor-vitae trees, *Thuja occidentalis*.
DISTRIBUTION: Known only from the type locality.

53. **Gymnopus dentatus** Murrill, sp. nov.

Pileus conic to expanded, usually with a prominent, conic umbo, cespitose, reaching 4 cm. broad; surface dry, glabrous, striate, dull-isabelline-avellaneous, slightly darker on the disk, margin concolorous, dentate: context thin, white, somewhat tough, with a farinaceous taste; lamellae deeply depressed or sinuate, broad, ventricose, rather distant, closely interveined, whitish: spores broadly ellipsoid, smooth, hyaline, 7–8.5 × 6–7 μ: stipe equal or tapering upward, white and glabrous above, concolorous and whitish-tomentose below, hollow, cartilaginous, reaching 6 cm. long and 5 mm. thick.

Type collected among short grass in open ground in the New York Botanical Garden, September 22, 1912, *W. A. Murrill* (herb. N. Y. Bot. Gard.).
HABITAT: On lawns.
DISTRIBUTION: Vicinity of New York City.

54. **Gymnopus unakensis** Murrill, sp. nov.

Pileus convex to plane, rarely becoming slightly umbilicate, gregarious, 1–2 cm. broad; surface smooth, glabrous, viscid when moist, dark-brown, margin concolorous, inflexed when young: lamellae sinuate-adnexed, broad, crowded, white, becoming somewhat fulvous when bruised: spores ellipsoid, smooth, hyaline, 6–7 × 4–5 μ: stipe subequal, nearly white, becoming fulvous when bruised, subglabrous, whitish-tomentose at the apex and base, 2–3 cm. long, 2–4 mm. thick.

Type collected among humus and fragments of dead wood in woods at Unaka Springs, Tennessee, August 18–24, 1904, *W. A. Murrill 774* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

55. **Gymnopus radicatus** (Relhan) Murrill.

Agaricus longipes Bull. Herb. Fr. *pl. 232*. 1784. Not *A. longipes* Scop. 1772.
Agaricus radicatus Relhan, Fl. Cantabr. Suppl. 28. 1786.
Gymnopus longipes Roussel, Fl. Calvados ed. 2. 62. 1806.
Clitocybe megalospora Clements, Bot. Surv. Neb. **4**: 18. 1896.

Pileus fleshy but thin, convex or nearly plane, sometimes somewhat umbonate, 2.5–7.5 cm. broad; surface glabrous, viscid or even glutinous when moist, often radiately wrinkled in the center, varying in color from grayish-brown to dark-brown, sometimes almost white: context white; lamellae broad, subdistant, adnexed: spores ellipsoid, with a slight, oblique apiculus at one end, 15–17.5 × 10–12.5 μ: stipe long, firm, glabrous, furfuraceous in one variety, colored like or paler than the pileus, at length striate or grooved, stuffed, slightly tapering upward, ending in a long, root-like extension which penetrates the earth deeply, 10–20 cm. or more long, 4–6 mm. thick.

TYPE LOCALITY: England.
HABITAT: In woods and bushy places, generally about stumps, attached to buried roots.
DISTRIBUTION: Maine to Alabama and west to Nebraska and Kansas; also in Europe.
ILLUSTRATIONS: Atk. Stud. Am. Fungi *f. 93;* Bull. Herb. Fr. *pl. 232, 515;* Bull. U. S. Dept. Agric. **175**: *pl. 2, f. 3;* Conn. State Geol. & Nat. Hist. Surv. **3**: *pl. 6;* Hussey, Ill. Brit. Myc. **1**: *pl. 36;* Mycologia **6**: *pl. 137, f. 1, pl. 138;* Mem. N. Y. State Mus. **3**: *pl. 48;* Sow. Engl. Fungi *pl. 48*.
EXSICCATI: Herpell, Präp. Hutpilze *7;* Rav. Fungi Am. *408;* Shear, N. Y. Fungi *6*.

56. **Gymnopus albipilatus** (Peck) Murrill.

Collybia albipilata Peck, Ann. Rep. N. Y. State Mus. **49**: 40. 1897.

Pileus thin, convex or nearly plane, sometimes slightly depressed in the center, 8–12 mm. broad; surface most minutely pubescent with short hyaline or whitish hairs, brown: lamellae

rather broad, rather close, adnexed, minutely hairy on the edges, white: spores minute, ellipsoid, 4–5 × 2.5–3 μ: stipe slender, hollow, pallid, adorned with a thin, pulverulent pubescence of somewhat scattered, whitish hairs, terminating in a fibrillose, radicate base, 2.5–5 cm. long, scarcely 1 mm. thick.

TYPE LOCALITY: Albany County, New York.
HABITAT: On buried pine cones.
DISTRIBUTION: New York.

57. **Gymnopus oculus** (Peck) Murrill.

Agaricus oculus Peck, Ann. Rep. N. Y. State Cab. **23**: 84. 1872.
Agaricus (*Collybia*) *abundans* Peck, Ann. Rep. N. Y. State Mus. **29**: 38. 1878.
?*Collybia lacerata* Quél. Ench. Fung. 33. 1886.
Collybia abundans Sacc. Syll. Fung. **5**: 241. 1887.
Omphalia oculus Sacc. Syll. Fung. **5**: 336. 1887.

Pileus thin, convex, umbilicate, often papillate, gregarious or somewhat cespitose, very abundant, 2–4 cm. broad; surface innately-fibrillose, avellaneous, the disk usually darker, margin often striate or splitting: lamellae rather narrow, close, adnate, sometimes veiny, white: spores subglobose, 4–6 μ: stipe furfuraceous to subglabrous, colored like or a little paler than the pileus, equal, hollow, often curved, easily splitting, 2.5–5 cm. long, 2–4 mm. thick.

TYPE LOCALITY: Adirondack Mountains, New York.
HABITAT: On decaying hemlock trunks.
DISTRIBUTION: Maine, Vermont, New York, and Michigan.
EXSICCATI: Ellis & Ev. Fungi Columb. *1201;* Ellis & Ev. N. Am. Fungi *3502*.

58. **Gymnopus alcalinolens** (Peck) Murrill.

Collybia alcalinolens Peck, Bull. N. Y. State Mus. 1^2: 6. 1887.

Pileus thin, subconic, convex, or nearly plane, gregarious, 1.5–3.5 cm. broad; surface glabrous or slightly silky-fibrillose, hygrophanous, dark-brown and sometimes striatulate on the margin when moist, grayish-brown or cinereous when dry, shining: context white, the odor strong, alkaline; lamellae broad, subdistant, deeply emarginate or adnexed, with a slight decurrent tooth, somewhat ventricose, whitish: spores broadly ellipsoid, 7.5–8.7 × 5–6 μ: stipe shining, glabrous, slightly pruinose at the apex, whitish, hollow, 2.5–5 cm. long, 2–6 mm. thick.

TYPE LOCALITY: Sandlake, New York.
HABITAT: In thin woods and bushy or grassy places.
DISTRIBUTION: New York and New England.

59. **Gymnopus platyphyllus** (Pers.) Murrill.

Agaricus platyphyllus Pers. Obs. Myc. **1**: 47. 1796.
Agaricus repens Fries, Obs. Myc. **1**: 14. 1815.
Collybia platyphylla Quél. Champ. Jura Vosg. 57. 1872.
Agaricus (*Tricholoma*) *praefoliatus* Peck, Ann. Rep. N. Y. State Mus. **32**: 55. 1880.

Pileus fleshy but thin and fragile, convex, becoming flattened, obtuse, 7.5–10 cm. broad; surface moist in wet weather, more or less streaked with fibrils, commonly grayish-brown but varying from whitish to dark-brown, sometimes with the disk darker than the margin: lamellae broad, adnexed, usually deeply emarginate or obliquely truncately notched next to the stipe, white: spores broadly ellipsoid, 7.5 –10 × 6–7 μ: stipe stout, fleshy, equal, striate or fibrillose-striate, stuffed or hollow, white or whitish, blunt at the base or praemorsely radicate, 7.5–10 cm. long, 8–16 mm. thick.

TYPE LOCALITY: Europe.
HABITAT: On much decayed wood on the ground about old stumps and logs in woods or their borders.
DISTRIBUTION: Canada to Alabama and west to Iowa; also in Europe.
ILLUSTRATIONS: Bull. Herb. Fr. *pl. 594* (as *A. grammocephalus*); Bull. U. S. Dept. Agric. **175**: *pl. 16, f. 1;* Cooke, Brit. Fungi *pl. 128 (183);* Mem. N. Y. State Mus. **3**: *pl. 49;* Mycologia **7**: *pl. 158, f. 4.*

60. **Gymnopus trullisatus** Murrill, sp. nov.

Pileus small, rather tough, convex, depressed at the center, gregarious, 1–1.5 cm. broad; surface glabrous, moist, nearly white, somewhat striate, margin entire, incurved when young:

lamellae adnate, crowded, rather narrow, white: spores subglobose, smooth, hyaline, 3.5 μ: stipe equal, slender, smooth, glabrous, pale-fulvous, cartilaginous, 2.5 cm. long, 1–2 mm. thick, with a root 2.5 cm. long, densely covered with mycelium to which a mass of earth clings.

Type collected in soil in woods at Seattle, Washington, October 20–November 1, 1911, *W. A. Murrill 439* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Washington.

61. **Gymnopus albogriseus** (Peck) Murrill.

Collybia albogrisea Peck, Bull. Torrey Club **22**: 199. 1895.
Collybia fimicola Earle, Bull. N. Y. Bot. Gard. **3**: 298. 1904.

Pileus fleshy, thin, convex or nearly plane, often cespitose and somewhat irregular, about 2.5 cm. broad; surface glabrous, whitish or grayish: context white; lamellae broad, distant, adnate, white or whitish, the interspaces often venose: spores broadly ellipsoid, 5–6 × 4 μ: stipe nearly equal, hollow, sometimes twisted, whitish or grayish, the lower part covered with a dense, whitish or yellowish tomentum, the upper part naked or merely whitish-pruinose, 3–5 cm. long, 2–4 mm. thick.

TYPE LOCALITY: Pasadena, California.
HABITAT: Among fallen leaves.
DISTRIBUTION: California.

62. **Gymnopus cremeimelleus** Murrill, sp. nov.

Pileus rather small, convex, becoming umbilicate, gregarious, 1.5–2 cm. broad; surface smooth, dry, glabrous, cremeous-melleous, margin entire, concolorous, incurved when young: lamellae broad, adnate, subdistant, white: spores ellipsoid, smooth, hyaline, 7–8 × 5 μ: stipe enlarged at the apex, smooth, glabrous, cartilaginous, concolorous at the apex, umbrinous at the base, at least when dry, 3–4 cm. long, 1.5 mm. thick.

Type collected in rich soil in woods near Seattle, Washington, October 20–November 1, 1911, *W. A. Murrill 497* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Washington.

63. **Gymnopus fulvidiscus** Murrill, sp. nov.

Pileus rather small, somewhat tough, broadly convex, gibbous, solitary, 1.5–2 cm. broad; surface glabrous, slightly radiate-rugose, somewhat viscid when moist, isabelline, fulvous on the umbo, margin entire, concolorous, inflexed when young: lamellae adnexed, attenuate behind, comparatively broad in front, crowded, white: spores ellipsoid, pointed at one end, smooth, hyaline, 5–6 × 3–4 μ: stipe slender, equal, compressed, becoming twisted on drying, cartilaginous, minutely pruinose at the apex, pale-reddish-brown, 4 cm. long, 1–2 mm. thick.

Type collected in leaf-mold in a redwood forest at Preston's Ravine, near Palo Alto, California, November 25, 1911, *W. A. Murrill & L. R. Abrams 1215* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

64. **Gymnopus denticulatus** Murrill, sp. nov.

Pileus at first convex, soon becoming umbilicate, rather firm and tough, cespitose, 2.5–6 cm. broad; surface smooth, glabrous, striate, dry, avellaneous-isabelline when young, becoming isabelline with age: lamellae sinuate, crowded, broad, denticulate on the edges, white: spores subglobose, smooth, hyaline, 3.5–4 μ: stipe tough, cylindric, equal, hollow, whitish-pruinose to subglabrous, pallid, 4 cm. long, 4 mm. thick.

Type collected on a decayed mossy trunk in woods near Seattle, Washington, October 20–November 1, 1911, *W. A. Murrill 621* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Vicinity of Seattle, Washington.

65. **Gymnopus subrugosus** Murrill, sp. nov.

Pileus rather tough, convex, solitary, 3 cm. broad; surface glabrous, rugose, ochraceous-isabelline, margin paler, sterile, incurved when young: lamellae adnate, broad, not crowded, white: spores ellipsoid, smooth, hyaline, 6–7 × 3–4 μ: stipe cylindric, equal, cartilaginous, hollow, smooth, glabrous, pale-bay, 6 cm. long, 4 mm. thick.

Type collected in woods at Mill City, Oregon, November 9, 1911, *W. A. Murrill 874* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

66. **Gymnopus umbonatus** (Peck) Murrill.

Collybia umbonata Peck, Bull. Torrey Club **31**: 178. 1904.

Pileus thin, conic, becoming convex or nearly plane with the margin deflexed, prominently umbonate, 2–10 cm. broad; surface glabrous, isabelline to bay-red or chestnut-colored, sometimes darker at the center than on the margin: lamellae numerous, subdistant, narrowed toward the stipe, nearly free, whitish: spores minute, ellipsoid, 6–8 × 4–5 μ: stipe rather long, glabrous, equal or slightly tapering upward, hollow, radicate, concolorous or a little paler, 5–30 cm. long, 4–12 mm. thick.

TYPE LOCALITY: California.
HABITAT: On and about old stumps in woods.
DISTRIBUTION: Washington, Oregon, and California.

67. **Gymnopus badiialbus** Murrill, sp. nov.

Pileus rather large, somewhat tough, broadly convex to nearly plane, with a distinct, conic umbo, gregarious, 3–5 cm. broad; surface smooth, glabrous, moist but not viscid, bay, margin entire, incurved when young: lamellae adnate, very much crowded, narrow, white: spores globose, smooth, hyaline, minute, about 4 μ: stipe rather short and thick, enlarged below, smooth, glabrous, pallid, hollow, inclined to be somewhat fleshy, 4–5 cm. long, 5–8 mm. thick.

Type collected on a much decayed log in woods near Seattle, Washington, October 20–November 1, 1911, *W. A. Murrill 611* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

68. **Gymnopus avellaneidiscus** Murrill, sp. nov.

Pileus rather tough, convex to expanded, cespitose, reaching 3.5 cm. broad; surface dry, smooth, glabrous, pale-fulvous, avellaneous on the rounded umbo: lamellae adnate, very much crowded, rather narrow, subventricose, white: spores globose, smooth, hyaline, 6–7 μ: stipe short, often compressed, smooth, subglabrous, pallid, 2–2.5 cm. long, 3–4 mm. thick.

Type collected in rich soil in woods near Seattle, Washington, October 20–November 1, 1911, *W. A. Murrill 438* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

69. **Gymnopus sublatericius** Murrill, sp. nov.

Pileus rather tough, nearly plane, not umbonate, solitary, 2–3 cm. broad; surface dry, glabrous, uneven, pale-latericeous or subfulvous: lamellae adnate with a slight decurrent tooth, cream-colored, crowded: spores subglobose, slightly apiculate at one end, smooth, hyaline, 6–7 μ long: stipe smooth, glabrous, concolorous, cylindric, cartilaginous, hollow, 4 cm. long, 4 mm. thick.

Type collected in woods at Glen Brook, Oregon, November 7, 1911, *W. A, Murrill 773* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

70. **Gymnopus fulvipes** Murrill, sp. nov.

Pileus convex to expanded, rather thin and tough, usually solitary, 1–3 cm. broad; surface moist but not viscid, smooth, glabrous, fulvous-ferruginous to latericeous, margin entire, concolorous or slightly paler, inflexed when young: lamellae adnate, distant, of medium breadth, interveined, white: stipe long, slender, equal or slightly tapering upward, cartilaginous, hollow, fulvous-ferruginous or pale-bay, clothed for its entire length with a fulvous tomentum, which is scanty at the apex and increases toward the base, 6–8 cm. long, 2–5 mm. thick.

Type collected among humus on the ground in coniferous woods at Mill City, Oregon, November 9, 1911, *W. A. Murrill 808* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Washington, Oregon, and California.

71. **Gymnopus avellaneigriseus** Murrill, sp. nov.

Pileus rather small, convex, broadly umbonate, gregarious, 2–2.5 cm. broad; surface smooth, glabrous, shining, avellaneous, margin concolorous, entire, incurved when young:

lamellae adnate to sinuate, broad, subdistant, grayish-white: spores ellipsoid, smooth, hyaline, 7–9 × 4–5 μ: stipe long and slender, cylindric, smooth, glabrous, hollow, whitish-flocculent at the apex, 5 cm. long, 3 mm. thick.

Type collected in rich soil in woods near Seattle, Washington, October 20–November 1, 1911, *W. A. Murrill 655* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

72. **Gymnopus griseifolius** Murrill, sp. nov.

Pileus convex, broadly umbonate, rather tough, solitary, 3 cm. broad; surface smooth, glabrous, moist, estriate, fuliginous, blackish on the umbo, margin somewhat paler, incurved when young, splitting with age: lamellae sinuate, very broad, especially near the margin, tapering inward, distant, griseous: spores ovoid or broadly ellipsoid, not angular, smooth, hyaline, copious, 7–9 × 4–6 μ: stipe tough, short, cylindric, hollow, smooth, glabrous, finely pruinose at the apex, griseous above, fuliginous below, 2 cm. long, 5 mm. thick.

Type collected on an old oak log at Glen Brook, Oregon, November 7, 1911, *W. A. Murrill 755* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

73. **Gymnopus musicola** Murrill, sp. nov.

Pileus thin, subfleshy, convex to expanded, gregarious, 1–1.5 cm. broad; surface white, smooth, minutely silky, subhygrophanous, margin entire, not striate: lamellae adnexed, crowded, narrow, white: spores not found: stipe cylindric, smooth, glabrous, white, tubular, stuffed, 2–3 cm. long, 1 mm. thick.

Type collected on banana trash at Santiago de las Vegas, Cuba, September 8, 1904, *F. S. Earle 173* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

74. **Gymnopus Boryanus** (Mont.) Murrill.

Agaricus (Collybia) Boryanus Berk. & Mont. Ann. Sci. Nat. III. 11: 235. 1849.
Collybia Boryana Sacc. Syll. Fung. 5: 240. 1887.

Pileus rather thin and tough, convex to plane, becoming depressed at the center, gregarious, 5–8 cm. broad; surface pure-white, glabrous, smooth, margin concolorous, undulate, inflexed when young: context thin, white, edible; lamellae very narrow, crowded, white, sinuate to nearly free, separating from the stipe with age: spores ellipsoid, smooth, hyaline, 4–6 × 3–4 μ: stipe equal or enlarged at the apex, cartilaginous, solid, isabelline to testaceous, blackish at the base, rough with scales pointing upward, 3 cm. long, 3–4 mm. thick.

TYPE LOCALITY: Bahia, Brazil.
HABITAT: On dead trunks.
DISTRIBUTION: Cuba, Jamaica, Dominica, and British Honduras; also in Brazil.

75. **Gymnopus albidulus** (Pat.) Murrill.

Collybia albidula Pat. in Duss, Enum. Champ. Guad. 49. 1903.

Pileus fleshy, convex, orbicular, more or less sinuate, 4–8 cm. broad; surface white or reddish, glabrous, smooth: lamellae soft, unequal, adnate, broad, white: spores ovoid, hyaline, smooth, 8–10 × 5–6 μ: stipe central, tough, cylindric, inflated at the base, glabrous, 5 cm. long.

TYPE LOCALITY: Guadeloupe.
HABITAT: On dead wood.
DISTRIBUTION: Known only from the type locality.

76. **Gymnopus orizabensis** Murrill, sp. nov.

Pileus convex, gibbous, gregarious, 2 cm. broad; surface smooth, dry, glabrous, white, pale-yellowish at the center, the margin somewhat irregular, white: lamellae adnate, crowded, narrow, white: spores globose or subglobose, smooth, hyaline, 3–4 μ: stipe equal, compressed, smooth, glabrous, whitish with a reddish-brown tint, 1.5 cm. long, 2 mm. thick.

Type collected on a fallen dead banana leaf in an orchard at Orizaba, Mexico, January 10–14, 1910, *W. A. & Edna L. Murrill 816* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

77. **Gymnopus oculatus** Murrill, sp. nov.

Pileus thin, rather tough, convex to plane, slightly umbonate, gregarious or cespitose, reaching 3 cm. broad; surface dry, glabrous, striate, white, latericeous on the disk: lamellae nearly free, narrow, crowded, stramineous: spores ellipsoid, smooth, hyaline, 4–6 × 2.5–3.5 μ: stipe cylindric, equal, slender, tough, hollow, pale-avellaneous-isabelline, whitish-pruinose, about 6 cm. long, 2 mm. thick.

Type collected on decayed wood in woods at Troy & Tyre, Cockpit Country, Jamaica, January 12–14, 1909. *W. A. Murrill & W. Harris 1022* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

78. **Gymnopus marasmiiformis** Murrill, sp. nov.

Pileus rather tough, convex, gregarious, 5–10 mm. broad; surface pale-ochraceous, silky-pruinose to glabrous, smooth, dry: lamellae adnate, narrow, yellowish, crowded: spores globose, smooth, hyaline, 2.5–4 μ: stipe cylindric, slightly tapering upward, smooth, densely whitish-pruinose, 2–3 cm. long, about 1 mm. thick.

Type collected on dead wood at Castleton, Jamaica, October 28, 1902, *F. S. Earle 254* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

79. **Gymnopus domesticus** Murrill, sp. nov.

Pileus convex to nearly plane, 1–3 cm. broad; surface dry, subglabrous, dark-ochraceous, margin even, not silky: context slightly brownish, mild, subaromatic; lamellae heterophyllous and furcate, adnate, subcrowded, rather thick, narrow, slightly ventricose, white to pale-brown: spores ellipsoid, smooth, hyaline, 6 × 4 μ: stipe cylindric, white, solid, pruinose above, subglabrous below, 1–2 cm. long, 3–4 mm. thick.

Type collected on manured garden beds at Hope Gardens, Jamaica, October 23, 1902, *F. S. Earle 31* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

80. **Gymnopus monticola** Murrill, sp. nov.

Pileus rather thick and tough, convex, broadly umbonate or nearly plane, becoming depressed around the disk, gregarious, 5 cm. broad; surface smooth, glabrous, becoming somewhat striate, pale-isabelline, pale-latericeous on the disk, margin pallid, irregular, becoming upturned and splitting with age: lamellae adnate or sinuate, broad, distant, white to yellowish, latericeous with age: spores ovoid, slightly roughened, hyaline, 7.5–8.5 × 5 μ: stipe enlarged above and below, tough, whitish-pulverulent, cremeous at the apex, latericeous near the base, 5 cm. long, 5 mm. thick.

Type collected on an old log across the trail on Sir John Peak, Jamaica, 1800 m., January 5, 1909, *W. A. Murrill 809* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

81. **Gymnopus nigritiformis** Murrill, sp. nov.

Pileus thin, convex, cespitose, about 1 cm. broad; surface dry, smooth, glabrous, fulvous, becoming fuliginous on drying: lamellae adnexed, subcrowded, narrow, white, scarcely changing on drying: spores ovoid, pointed at one end, slightly curved, smooth, hyaline, 5 × 3 μ: stipe slender, cylindric, equal, smooth, subglabrous, dull-rosy-isabelline, 2–3 cm. long, 1.5–2 mm. thick.

Type collected on the ground in humus under tree ferns at Morce's Gap, Jamaica, 1500 m. elevation, December 29, 30, January 2, 1908–9, *W. A. & Edna L. Murrill 746* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

82. **Gymnopus densifolius** Murrill, sp. nov.

Pileus very convex, not expanding, more or less eccentric, very thin, gregarious to subcespitose, 1–1.5 cm. broad; surface pruinose to glabrous, smooth, hygrophanous, fulvous, margin inflexed when young, concolorous, estriate, splitting with age, often discolored on

drying: lamellae adnexed, extremely narrow and extremely crowded, white: spores globose to subglobose, smooth, hyaline, 4–5 μ: stipe cylindric, equal, very short, often eccentric, pruinose, especially above, pallid, spongy within, 1 cm. long, 2 mm. thick.

Type collected on a much decayed stump at Port Antonio, Jamaica, November 23, 1902, *F. S. Earle 578* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

83. **Gymnopus fimetarius** Murrill, sp. nov.

Pileus thin and rather fragile, convex to expanded, becoming depressed at times, gregarious to subcespitose, reaching 1.5 cm. broad; surface glabrous, striate, fulvous, hygrophanous, margin concolorous or paler, splitting with age: lamellae adnate, crowded, narrow, brown: spores ellipsoid or ovoid, smooth, hyaline, 7 × 4 μ: stipe equal, smooth, glabrous, grayish-white, hollow, 2 cm. long, about 2 mm. thick.

Type collected on horse manure in an opening on the bank of a stream in a dense virgin forest near Jalapa, Mexico, 1500 m. elevation, December 12–20, 1909, *W. A. & Edna L. Murrill 124* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Eastern Mexico.

84. **Gymnopus cyanocephalus** (Pat.) Murrill.

Collybia cyanocephala Pat. Bull. Soc. Myc. 18: 171. 1902.

Pileus fleshy, convex, orbicular, 2–8 cm. broad; surface glabrous, polished, deep-azure-blue: lamellae mixed with short ones, adnate, slightly crowded, broad, concolorous, but darker: spores hyaline, subglobose, 6 × 5 μ: stipe central, cylindric, glabrous, shining, white, bluish at the apex, solid, tough, 5–7 cm. long.

TYPE LOCALITY: Guadeloupe.

HABITAT: On soil.

DISTRIBUTION: Known only from the type locality.

85. **Gymnopus cinchonensis** Murrill, sp. nov.

Pileus expanded, somewhat depressed at the center, rather thick and fleshy, solitary to gregarious, reaching 3 cm. broad and 7 mm. thick; surface dry, smooth, glabrous, avellaneous, darker at the center; margin regular, concolorous, becoming somewhat upturned, not striate: lamellae nearly free, white, crowded, ventricose: spores ellipsoid, smooth, hyaline, 7–9 × 4–5 μ: stipe cylindric, equal, smooth, glabrous, pale-avellaneous or nearly white, 2.5–4 cm. long, 3–4 mm. thick.

Type collected in rich soil in woods at Cinchona, Jamaica, 1500 m. elevation, December 25–January 8, 1908–9, *W. A. & Edna L. Murrill 634* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

86. **Gymnopus subnivulosus** Murrill, sp. nov.

Pileus convex, gregarious, reaching 2 cm. broad; surface smooth, glabrous, avellaneous with a rosy tint, the margin entire, hygrophanous, striate: lamellae adnate, crowded, rather broad, white: spores ellipsoid, smooth, hyaline, 7–8 × 4–5 μ: stipe slender, slightly tapering upward, reddish-brown, scabrous, 3–4 cm. long, 2–3 mm. thick.

Type collected on decaying cocoanut husks in a cocoanut plantation between Port Antonio and Manchioneal, Jamaica, December 17, 1908, *W. A. Murrill 229* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

87. **Gymnopus subavellaneus** Murrill, sp. nov.

Pileus fleshy, firm, convex, solitary, 1.5 cm. broad, 7 mm. high; surface smooth, glabrous, pale-avellaneous, becoming brownish when bruised, margin thin, entire, concolorous, incurved: lamellae adnate with a decurrent tooth, rather narrow, subdistant, pale-murinous, almost griseous: spores broadly ellipsoid, smooth, hyaline, granular, 6–7.5 μ long: stipe cylindric, equal, thick, smooth, glabrous, ashy-white with a murinous tint, 3.5 cm. long, 5 mm. thick.

Type collected on a wet, shaded bank at Cinchona, Jamaica, about 1500 m. elevation, December 25–January 8, 1908–9, *W. A. & Edna L. Murrill 413* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

88. **Gymnopus nigrita** (Berk. & Curt.) Murrill.

Agaricus (Collybia) nigrita Berk. & Curt. Jour. Linn. Soc. **10**: 285. 1868.
Collybia nigrita Sacc. Syll. Fung. **5**: 225. 1887.
Collybia irrorata Pat. in Duss, Enum. Champ. Guad. 49. 1903.

Pileus hemispheric with a slight umbo, very concave below, gregarious or cespitose, 1.5–2.5 cm. broad, 7 mm. high; surface pulverulent to glabrous, rugose at times, hygrophanous, grayish-white to fuliginous, blackening on drying, margin entire, concolorous, incurved when young: lamellae adnate, narrow, crowded, dull-grayish-white, blackening on drying: spores broadly ellipsoid or subglobose, smooth, hyaline, 5–6 × 4.5–5.5 μ: stipe cylindric, equal, fibrillose, concolorous, 4–5 cm. long, 1–2 mm. thick.

TYPE LOCALITY: Cuba.
HABITAT: On dead wood.
DISTRIBUTION: Cuba, Jamaica (to 900 m.), Grenada, Guadeloupe, and eastern Mexico.

89. **Gymnopus roseilividus** Murrill, sp. nov.

Pileus convex-hemispheric, with a slight rounded umbo, solitary, 12 mm. broad; surface smooth, glabrous, hygrophanous, rosy-livid, margin undulate, somewhat darker, not striate: lamellae adnate, arcuate, rather broad, distant, grayish-white: spores ellipsoid, smooth, hyaline, 5 × 3 μ: stipe tapering upward, tough, smooth, glabrous, concolorous, 2 cm. long, 1 mm. thick at the apex, 2 mm. at the base.

Type collected on a dead fallen stick under trees at Orizaba, Mexico, 1200 m. elevation, January 10–14, 1910, *W. A. & Edna L. Murrill 810* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

90. **Gymnopus xuchilensis** Murrill, sp. nov.

Pileus conic to convex, not expanding, solitary, 7 mm. broad; surface smooth, glabrous, latericeous, margin slightly irregular, concolorous: lamellae adnexed, crowded, rather broad, stramineous: stipe slightly tapering upward, smooth, glabrous, amber-colored, whitish-myceloid at the base, 1 cm. long, 1–1.5 mm. thick.

Type collected on decayed wood in a coffee plantation at Xuchiles, near Cordoba, Mexico, 400–600 m. elevation, January 17, 1910, *W. A. & Edna L. Murrill 1135* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

91. **Gymnopus jamaicensis** Murrill, sp. nov.

Pileus convex, subcespitose, reaching 3 cm. broad; surface moist, glabrous, dark-reddish-brown, becoming paler on drying, margin entire, concolorous, faintly striate: context thin, whitish, the taste mild; lamellae adnexed, narrow, crowded, pallid: stipe cylindric, equal, pruinose to glabrous, pallid, hollow, 4–6 cm. long, 3 mm. thick.

Type collected on an ants' nest at Castleton, Jamaica, October 28, 1902, *F. S. Earle 221* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

92. **Gymnopus subflavescens** Murrill, sp. nov.

Pileus convex to expanded, gregarious, 1–2 cm. broad; surface white, with a floccose, subseparable pellicle, becoming yellow on drying, margin entire, striate: lamellae adnate, crowded, rather narrow, white, becoming yellowish: spores globose, smooth, hyaline, 3–4.5 μ: stipe cylindric, very slender, white, pruinose to glabrous, 2–3 cm. long, 1 mm. thick.

Type collected on dead wood at Castleton, Jamaica, October 28, 1902, *F. S. Earle 255* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Jamaica, at low elevations.

93. **Gymnopus setulosus** Murrill, sp. nov.

Pileus irregularly conic to convex, truncate, solitary, 16 mm. broad and 6 mm. high; surface uneven, rugose, dry, fuliginous, isabelline on the disk, entirely and thickly beset with minute, white or brownish bristles, margin undulate, slightly incurved, concolorous: lamellae adnate to a collar, distant, rather broad, pure-white: spores globose, smooth, hyaline, granular,

7–11 μ: stipe compressed, isabelline, with a dense coat of minute brown fibrils, hollow, tough, enlarged and radicate at the base as in *Gymnopus radicatus*, 5 cm. long, 2–3 mm. thick.

Type collected in clay on a wet, mossy bank at Cinchona, Jamaica, about 1500 m. elevation, December 25–January 8, 1908–9, *W. A. & Edna L. Murrill 632* (herb. N. Y. Bot. Gard.).

DISTRIBUTION: Known only from the type locality.

DOUBTFUL AND EXCLUDED SPECIES

Agaricus (*Gymnopus*) *leiopus* Pers. Disp. Meth. Fung. 21. 1797. Simply reported from North Carolina by Schweinitz.

Agaricus (*Collybia*) *praeceps* Berk. & Curt. Ann. Mag. Nat. Hist. III. **4**: 285. 1859. Described from specimens collected in New England by Sprague, who sent notes and a sketch with them to Berkeley. The types at Kew are large, depressed when old, and very slightly striate, resembling *G. dryophilus*, although the stipe is rather long for this species.

Agaricus (*Collybia*) *semihaerens* Berk. & Curt. Ann. Mag. Nat. Hist. III. **4**: 286. 1859. Described from specimens collected by Wright on dead wood in Connecticut. Some of those sent to Fries appeared to me to belong rather to *Pleurotus*. The types at Kew are small and slender like *Mycena* or *Marasmius*, the pileus measuring 5–8 mm. broad in a dried condition.

Agaricus (*Collybia*) *Spragueii* Berk. & Curt. Ann. Mag. Nat. Hist. III. **4**: 285. 1859. Described from specimens collected on rotten logs in New England by Sprague. I have seen one poor specimen in Fries's herbarium at Upsala.

Agaricus (*Collybia*) *stereocephalus* Berk. & Curt. Ann. Mag. Nat. Hist. III. **4**: 285. 1859. Described from specimens collected among spruce needles in New England by Sprague. The types at Kew are in bad shape, but appear to belong to *Melanoleuca*.

Agaricus (*Gymnopus*) *trichopus* of Schw. Schr. Nat. Ges. Leipzig **1**: 82. 1822. Reported from North Carolina by Schweinitz and referred by most mycologists to *Collybia butyracea*. It is probably a form of *G. dryophilus*.

Agaricus (*Collybia*) *xanthopilus* Mont. Syll. Crypt. 106. 1856. Described from specimens collected on rotten wood in fields near Columbus, Ohio. The types at Paris, which are in rather poor condition, seem near *G. dryophilus*.

Collybia aquosa adnatifolia Peck, Bull. N. Y. State Mus. **2**: 25. 1887. Peck states in his 49th report that this variety is probably a *Clitocybe*.

Collybia asema (Fries) P. Karst. Bidr. Finl. Nat. Folk **32**: 145. 1879. Reported from North Carolina and Massachusetts, occurring in pine woods. Compare *Agaricus leiopus* Schw.

Collybia brunnescens Peck, Bull. Torrey Club **33**: 214. 1906. Described from specimens collected by Mrs. Hunt in California. The types at Albany prove to be *Melanoleuca melaleuca*.

Collybia butyracea (Bull.) Quél. Champ. Jura Vosg. 58. 1872. Described from France and reported by the older mycologists as occurring in America from Canada to South Carolina and west to Ohio. Peck reports it common in groves of spruce and balsam at North Elba. Rea remarks that Lloyd's photograph representing this species does not suggest *C. butyracea* to him. Dodge reports a form of *G. dryophilus* from Wisconsin which might be called *C. butyracea*.

Collybia campanella Peck, Bull. N. Y. State Mus. 116: 19. 1907. Described from specimens collected on dead branches of arbor-vitae at Horicon, New York. This species belongs in *Crinipellis*.

Collybia cirrata (Pers.) Quél. Champ. Jura Vosg. 60. 1872. (*Agaricus cirrhatus* Pers. Obs. Myc. **2**: 53. 1799.) Although this species is kept distinct from *C. tuberosa* by Bambeke, Ricken, and others, I must confess my inability to see the difference, either in the descriptions or in herbarium specimens. Persoon reduced his own species to varietal rank, and Molisch found that the mycelium of both was phosphorescent when the hymenophore was developing from the tuber, which latter is said by some to be ochraceous in *C. cirrata* and brownish-purple in *C. tuberosa*. I have found tubers on *Lactaria turpis*, the favorite host of *C. tuberosa*, colored purplish-brown like poplar buds, while tubers buried deep in soil rich in humus were much paler.

Collybia clavus (L.) Quél. Champ. Jura Vosg. 63. 1872. Reported as occurring on mosses in North Carolina and Massachusetts.

Collybia clusilis (Fries) P. Karst. Bidr. Finl. Nat. Folk **32**: 164. 1879. Reported from New York by Peck and said by him to belong in the genus *Omphalia*.

Collybia collina (Scop.) Quél. Champ. Jura Vosg. 61. 1872. Reported from North Carolina and Wisconsin, but probably confused with *G. dryophilus*.

Collybia confluens (Pers.) Quél. Champ. Jura Vosg. 59. 1872. See *Marasmius confluens* (Pers.) Ricken.

Collybia conigena (Pers.) Quél. Champ. Jura Vosg. 60. 1872. (*Agaricus conigenus* Pers. Syn. Fung. 388. 1801.) Reported as occurring on fallen pine cones in Massachusetts, New Jersey, and North Carolina. It seems near *Gymnopus albipilatus*. *A. conigenus* Fries is a different plant.

Collybia Dorotheae (Berk.) Sacc. Syll. Fung. **5**: 219. 1887. (*Agaricus* (*Collybia*) *Dorotheae* Berk. Grevillea **1**: 88. 1872.) Described from specimens collected in a hothouse in England on a dead fern stem from Jamaica. There are seven good hymenophores at Kew, which resemble *Omphalopsis euspeirea*, but the lamellae are rather narrow and the stipes much longer. This species cannot be definitely considered as American, since it may have originated from other plants in the hothouse growing in almost any part of the tropical world.

Collybia esculenta (Wulfen) Quél. Champ. Jura Vosg. 62. 1872. Reported a few times from North America.

Collybia estensis Morgan, Jour. Cinc. Soc. Nat. Hist. **6**: 71. 1883. Described from the Miami Valley, Ohio, occurring there among leaves. It cannot be far from *G. strictipes*.

Collybia fusipes (Bull.) Quél. Champ. Jura Vosg. 57. 1872. Reported from Massachusetts, West Virginia, and a few other states by the older mycologists, but I have been unable to connect any American specimens with typical specimens collected in England and elsewhere in Europe. Dodge has recently reported it from Wisconsin.

Collybia Hariolorum (Bull.) Quél. Champ. Jura Vosg. 59. 1872. Reported a few times from the eastern United States. Bambeke considers it the same as *Marasmius confluens*.

Collybia hirticeps Peck, Bull. Torrey Club **34**: 98. 1907. Specimens collected by Burnham in 1908 prove to be *Crinipellis zonata* (Peck) Pat.

Collybia laxipes (Fries) Quél. Champ. Jura Vosg. 330. 1873. Recently reported from Wisconsin by Dodge as occurring there commonly in July.

Collybia loripes (Fries) P. Karst. Bidr. Finl. Nat. Folk **32**: 142. 1879. Reported a few times from North America and generally considered synonymous with *C. asema* and *A. leiopus*.

Collybia Micheliana (Fries) Quél. Champ. Jura Vosg. 217. 1872. Reported by Fries once from the West Indies and once from Costa Rica, occurring on grass roots or moist earth.

Collybia murina (Batsch) Quél. Ench. Fung. 33. 1886. (*Agaricus murinus* Batsch, Elench. Fung. 79. 1783.) Specimens at Albany collected by Peck at North Elba prove to be the gray form of *Vaginata plumbea*.

Collybia nivulosa Berk. & Curt. This appears to be a manuscript name used in the Kew herbarium to designate several plants collected on decayed wood in Cuba by Wright and numbered 111. In Hedwigia in 1896, Hennings reports *Collybia nivosula* Berk. from Victoria. It may be that he had a specimen of Cuban fungi distributed from Wright's collections which bore this manuscript name and he considered the Victoria specimens the same as those from Cuba.

Collybia ramosa (Bull.) P. Karst. Bidr. Finl. Nat. Folk **32**: 147. 1879. Reported twice from the West Indies by Fries, but probably not an American species.

Collybia siticulosa Banning & Peck; Peck, Ann. Rep. N. Y. State Mus. **44**: 181 (69). 1891. Described from specimens collected by Miss Banning at Baltimore, Maryland. Not seen at Albany, and the description is very meager.

Collybia subdryophila Atk. Ann. Myc. **7**: 367. 1909. Not *C. subdryophila* P. Henn. 1901. Described from specimens collected in woods at Chapel Hill, North Carolina, by W. C. Coker. Types not seen.

Collybia subrigua Banning & Peck; Peck, Ann. Rep. N. Y. State Mus. **44**: 181 (69). 1891. Described from specimens collected on the ground in Carroll County, Maryland. Not seen at Albany. Apparently near *G. fuliginellus* (Peck) Murrill.

Collybia tenacella (Pers.) Quél. Champ. Jura Vosg. 62. 1872. Reported from Massachusetts and the Carolinas. It is probably the same as the European species *C. stolonifer* Fries. Compare *Collybia cirrata*.

Collybia umbrina Clements, Bot. Surv. Neb. **4**: 19. 1896. I have not seen the types.

Collybia velutina Clements, Bot. Surv. Neb. **4**: 19. 1896. Described from specimens collected on decaying logs at Bellevue, Nebraska. I have not seen the types; but the description reads like that of *Collybia tenuipes*.

Collybia? ventricosa (Bull.) Quél. Ench. Fung. 30. 1886. Reported from North Carolina by Curtis, but probably not an American species.

Marasmius aculeatus Pat. Bull. Soc. Myc. Fr. **16**: 175. 1901. Described from Guadeloupe and very similar to *G. chrysopeplus*, but said to grow in soil and to have only about ten lamellae. When examining Patouillard's collection, I stated in my notes that his *M. aculeatus* was probably the same as *G. chrysopeplus* and Patouillard himself had already stated that it was the same as *Pleurotus aureotomentosus* Kalchbr., described from Port Natal in 1881. Later, when examining specimens of *G. chrysopeplus* with Bresadola, he claimed that they were not distinct from *P. aureotomentosus*. *G. chrysopeplus* is a peculiar plant and might easily be assigned to *Marasmius* or *Omphalia*, but hardly to *Pleurotus*.

Panus Sullivantii Mont. Syll. Crypt. 149. 1856. Described from specimens collected on rotten wood among leaves near Columbus, Ohio. There are four plants at Paris which grew in a cluster on dead wood. I find in my notes that they "might possibly be a young stage of *Lentinus caespitosus* or *Collybia*, but are certainly not *Panus*."

37. **HYDROCYBE** P. Karst. Bidr. Finl. Nat. Folk **32**: 233. 1879.

Hygrophorus § *Hygrocybe* Fries, Epicr. Myc. 329. 1838.
Hygrocybe Fayod, Ann. Sci. Nat. VII. 9: 307. 1889.
Godfrinia Maire, Rech. Cyt. Tax. Basid. 116. 1902.

Fleshy, thin, fragile, putrescent, solitary or gregarious, rarely cespitose; surface viscid, usually bright-colored: lamellae waxy, fragile, usually bright-colored, decurrent or adnexed: spores hyaline: stipe central, fleshy, fragile, usually hollow: veil none.

Type species, *Hydrocybe sciophana* (Fries) P. Karst.

I. SPECIES OCCURRING IN TEMPERATE NORTH AMERICA, EXCEPT THOSE CONFINED TO THE PACIFIC COAST

Pileus white.
- Pileus 1–2.5 cm. broad.
  - Stipe 2 cm. long. — 1. *H. pusilla.*
  - Stipe 5 cm. long. — 2. *H. nivea.*
- Pileus 2.5–5 cm. broad; stipe 8–15 cm. long. — 3. *H. pura.*

Pileus sulfur-yellow, 6–8 mm. broad. — 4. *H. parvula.*

Pileus pale-yellow, rarely reddish on the disk in *H. chlorophana*.
- Lamellae arcuate-decurrent. — 5. *H. nitida.*
- Lamellae adnate or slightly decurrent. — 6. *H. ceracea.*
- Lamellae adnexed. — 7. *H. chlorophana.*

Pileus golden-yellow; lamellae emarginate, orange or purplish on the edges. — 8. *H. marginata.*

Pileus pinkish-buff, the slime sometimes greenish when young. — 9. *H. Peckii.*

Pileus some shade of red, rarely tinged with green, often fading to yellow with age or on drying.
- Pileus cuspidate.
  - Pileus blackening on drying. — 10. *H. conica.*
  - Pileus not blackening on drying.
    - Lamellae narrow; spores 6–7.5 μ long. — 11. *H. ruber.*
    - Lamellae broad; spores 12–16 μ long. — 12. *H. cuspidata.*
- Pileus not cuspidate.
  - Pileus 6–10 mm. broad. — 13. *H. minutula.*
  - Pileus 1–5 cm. broad.
    - Pileus reddish or yellow, covered with evanescent greenish slime. — 14. *H. psittacina.*
    - Pileus incarnate, varying to white or slightly fuliginous, not expallent; stipe fulvous. — 15. *H. laeta.*
    - Pileus reddish, tawny-red, or grayish-red; stipe white. — 16. *H. laricina.*
    - Pileus and stipe scarlet, fading to pale-red or yellow.
      - Pileus convex. — 17. *H. miniata.*
      - Pileus umbilicate. — 18. *H. flammea.*
    - Pileus 5–10 cm. broad. — 19. *H. punicea.*

Pileus some shade of brown or greenish-brown.
- Pileus and stipe pale-brown. — 20. *H. lurida.*
- Pileus olive-brown, fading to yellowish-buff; stipe grayish-white or brownish. — 21. *H. Davisii.*
- Pileus greenish-brown or yellowish-brown, not fading on drying; stipe yellow. — 22. *H. immutabilis.*

II. SPECIES OCCURRING ON THE PACIFIC COAST

Pileus cuspidate.
- Pileus blackening on drying. — 10. *H. conica.*
- Pileus not blackening on drying. — 23. *H. californica.*

Pileus convex or slightly umbilicate.
- Pileus 1.5 cm. broad, the color persistently red. — 24. *H. constans.*
- Pileus 2.5 cm. broad, fading to yellow. — 17. *H. miniata.*

III. SPECIES OCCURRING IN TROPICAL NORTH AMERICA

Pileus small, not exceeding 1.5 cm. broad.
- Stipe 1.5–2.5 cm. long.
  - Lamellae decurrent. — 25. *H. rosea.*
  - Lamellae adnate or adnexed.
    - Pileus luteous with faint traces of red; stipe citrinous. — 26. *H. flavolutea.*
    - Pileus aurantiacous; stipe concolorous. — 27. *H. aurantia.*
- Stipe 3–4 cm. long; lamellae decurrent.
  - Pileus luteous. — 28. *H. hondurensis.*
  - Pileus miniatous. — 29. *H. subminiata.*
  - Pileus ferruginous. — 30. *H. trojana.*

Pileus medium to large, usually 2–5 cm. broad, rarely smaller in *H. laeta* and *H. flammea.*
- Pileus distinctly umbonate.
  - Pileus blackening on drying. — 10. *H. conica.*
  - Pileus not blackening on drying. — 31. *H. subflavida.*
- Pileus convex to plane or depressed.
  - Pileus pale-reddish-yellow; stipe pale-yellow; spores globose. — 32. *H. Earlei.*
  - Pileus ruber to miniatous; stipe luteous or paler. — 33. *H. subcaespitosa.*
  - Pileus incarnate, not fading, rarely varying to white or pale-fuliginous; stipe fulvous. — 15. *H. laeta.*
  - Pileus scarlet, soon fading.
    - Spores 8–9 × 4–6 μ. — 18. *H. flammea.*
    - Spores 18 × 10 μ. — 34. *H. bella.*

1. **Hydrocybe pusilla** (Peck) Murrill.

Hygrophorus pusillus Peck, Bull. Torrey Club **29**: 69. 1902.

Pileus thin, convex, 1–2 cm. broad; surface subviscid, glabrous, white: context having a pleasant, anise-like odor; lamellae decurrent, subdistant, arcuate, white: spores 4–6 μ long: stipe short, glabrous, white, hollow, whitish-mycelioid at the base, 2–2.5 cm. long, 1–2 mm. thick.

TYPE LOCALITY: Moscow Mountains, Idaho.
HABITAT: On the ground in dense woods.
DISTRIBUTION: Known only from the type locality.

2. **Hydrocybe nivea** (Scop.) Murrill.

Agaricus niveus Scop. Fl. Carn. ed. 2. **2**: 430. 1772.
Hygrophorus niveus Fries, Epicr. Myc. 327. 1838.
Camarophyllus niveus P. Karst. Bidr. Finl. Nat. Folk **32**: 232. 1879.

Pileus submembranous, rather tough, campanulate to convex, umbilicate, scarcely 2.5 cm. broad; surface glabrous, viscid, striate, snow-white: lamellae decurrent, narrow, arcuate, distant, white: spores smooth, hyaline, 6–8 × 4–5 μ: stipe slender, equal, hollow, smooth, glabrous, white, 5 cm. long, 2–4 mm. thick.

TYPE LOCALITY: Carniola.
HABITAT: Among mosses in low ground.
DISTRIBUTION: New England to Wisconsin and south to New Jersey; also in Europe.
ILLUSTRATION: L. Dufour, Atl. Champ. *pl. 19, f. 42.*

3. **Hydrocybe pura** (Peck) Murrill.

Hygrophorus purus Peck, Ann. Rep. N. Y. State Mus. **26**: 63. 1874.

Pileus fragile, often irregular, conic to expanded and cupulate from the recurving of the thin margin, 2.5–5 cm. broad; surface pure-white, very viscid: lamellae emarginate with a decurrent tooth, subdistant, broad, ventricose, pure-white: spores 8 × 5 μ: stipe subflexuous, glabrous, very viscid, pure-white, hollow, 8–15 cm. long, 4–7 mm. thick.

TYPE LOCALITY: Croghan, New York.
HABITAT: On the ground in open woods.
DISTRIBUTION: Known only from the type locality.

4. **Hydrocybe parvula** (Peck) Murrill.

Hygrophorus parvulus Peck, Ann. Rep. N. Y. State Mus. 28: 50. 1876.

Pileus thin, hemispheric or convex, 6–8 mm. broad; surface subviscid, smooth, glabrous, hygrophanous, sulfur-yellow, margin striatulate when moist: lamellae subdistant, arcuate, adnate or decurrent, pale-yellow or whitish: stipe smooth, equal, hollow, pale-yellow or luteous, often darker than the pileus, 2.5 cm. long.

TYPE LOCALITY: Northville, New York.
HABITAT: On the ground in woods.
DISTRIBUTION: New York.
ILLUSTRATIONS: Ann. Rep. N. Y. State Mus. 28: *pl. 1, f. 20–24.*

5. **Hydrocybe nitida** (Berk. & Curt.) Murrill.

Hygrophorus nitidus Berk. & Curt. Ann. Mag. Nat. Hist. II. 12: 424. 1853.

Pileus thin, fragile, convex, umbilicate, gregarious or cespitose, 1–2.5 cm. broad; surface viscid, pale-yellow, whitish when dry, striatulate on the margin when moist: context thin, pale-yellow; lamellae arcuate-decurrent, distant, interveined, pale-yellow: spores broadly ellipsoid, hyaline, 6–8 × 5–6 μ: stipe slender, fragile, viscid, concolorous, hollow, 7–10 cm. long, 2–4 mm. thick.

TYPE LOCALITY: South Carolina.
HABITAT: Low places.
DISTRIBUTION: Eastern United States.
ILLUSTRATIONS: Ann. Rep. N. Y. State Cab. 23: *pl. 1, f. 2–6;* Bull. N. Y. State Mus. 94: *pl. 88, f. 1–7;* Mycologia 2: *pl. 27, f. 6.*
EXSICCATI: Ellis & Ev. N. Am. Fungi *1914.*

6. **Hydrocybe ceracea** (Wulfen) P. Karst. Bidr. Finl. Nat. Folk **32**: 234. 1879.

Agaricus ceraceus Wulfen in Jacq. Misc. Austr. 2: 105. 1781.
Hygrophorus ceraceus Fries, Epicr. Myc. 330. 1838.

Pileus thin, fragile, convex to plane, obtuse, 1–3 cm. broad; surface viscid, striatulate, pale-yellow, the color of wax: context concolorous; lamellae adnate or slightly decurrent, distant, very broad, concolorous: spores ellipsoid, hyaline, 7–9 × 4–6 μ: stipe usually equal, straight, rarely flexuous, shining, concolorous, hollow, 3–8 cm. long, 3–5 mm. thick.

TYPE LOCALITY: Austria.
HABITAT: Among mosses or grasses.
DISTRIBUTION: Eastern temperate North America; also in Europe.
ILLUSTRATIONS: Boudier, Ic. Myc. *pl. 39;* Jacq. Misc. Austr. 2: *pl. 15, f. 2;* Mycologia 2: *pl. 27, f. 2;* Sow. Engl. Fungi *pl. 20.*

7. **Hydrocybe chlorophana** (Fries) P. Karst. Bidr. Finl. Nat. Folk **32**: 236. 1879.

Agaricus chlorophanus Fries, Syst. Myc. 1: 103. 1821.
Hygrophorus chlorophanus Fries, Epicr. Myc. 332. 1838.

Pileus thin, fragile, convex to nearly plane, obtuse, striate and often lobed or split at the margin, 2–4 cm. broad; surface pale-yellow, rarely reddish at the center, glabrous, viscid: context thin, yellowish, edible; lamellae thin, fragile, adnexed, subdistant, ventricose, concolorous or paler: spores ovoid, hyaline, 7–8 × 4–5 μ: stipe cylindric, glabrous, viscid, concolorous, hollow, 3–7 cm. long, 2–4 mm. thick.

TYPE LOCALITY: Europe.
HABITAT: In damp woods.
DISTRIBUTION: Maine to Alabama and west to Wisconsin; also in Europe.
ILLUSTRATIONS: Boudier, Ic. Myc. *pl. 41;* Fries, Ic. Hymen. *pl. 167, f. 4;* Gill. Champ. Fr. *pl. 139 (329);* Lucand, Champ. Fr. *pl. 94;* Mem. N. Y. State Mus. 3: *pl. 51, f. 13–20;* Mycologia 2: *pl. 27, f. 3.*

8. **Hydrocybe marginata** (Peck) Murrill.

Hygrophorus marginatus Peck, Ann. Rep. N. Y. State Mus. 28: 50. 1876.

Pileus fragile, often irregular or lobed, subcampanulate or expanded, often broadly umbonate, 2.5 cm. broad; surface glabrous, shining or minutely rimose, golden-yellow, margin

thin, striatulate: lamellae emarginate, subdistant, broad, ventricose, yellow, darker with age, orange or purplish on the edges: spores subellipsoid, 8 μ long: stipe glabrous, pale-yellow, hollow, often flexuous or irregular, 5 cm. long, 2–4 mm. thick.

TYPE LOCALITY: Northville, New York.
HABITAT: On the ground in woods.
DISTRIBUTION: New York and Massachusetts to Virginia and Ohio.
ILLUSTRATION: Hard, Mushrooms *f. 173*.

9. **Hydrocybe Peckii** (Atk.) Murrill.

Hygrophorus Peckii Atk. Jour. Myc. 8: 114. 1902.

Pileus convex with the margin somewhat incurved, often depressed, solitary or gregarious, 1–2.5 cm. broad; surface pinkish-buff, finely striate when moist, very slimy, the slime sometimes greenish when young: context having a fetid odor; lamellae arcuate-decurrent, distant, broad, concolorous: spores ellipsoid, slightly inequilateral, smooth, granular, 6–8 × 4–5 μ: stipe fragile, often splitting, slimy, concolorous, hollow, 6–10 cm. long, 2–4 mm. thick.

TYPE LOCALITY: Piseco, New York.
HABITAT: On the ground in woods, pastures, and bushy places.
DISTRIBUTION: Eastern United States.

10. **Hydrocybe conica** (Scop.) P. Karst. Bidr. Finl. Nat. Folk **32**: 236. 1879.

Agaricus conicus Scop. Fl. Carn. ed. 2. **2**: 443. 1772.
Hygrophorus conicus Fries, Epicr. Myc. 331. 1838.

Pileus thin, fragile, conic, usually acute, often lobed at the margin, 2–5 cm. broad, rarely reaching 8 cm.; surface viscid when moist, glabrous or fibrillose, sometimes becoming rimose, some shade of red or yellow, at times tinged with green, almost always turning black on drying: context thin, suffused with rosy hues; lamellae almost free, attenuate behind, thin, rather crowded, ventricose, yellow, blackening on drying: spores ellipsoid, hyaline, 8–11 × 6–8 μ: stipe equal, fibrous-striate, hollow, yellow, becoming black on drying, 3–10 cm. long, 3–7 mm. thick.

TYPE LOCALITY: Carniola.
HABITAT: In moist woods and grassy places.
DISTRIBUTION: Greenland to Bermuda and the Bahamas and west to the Pacific coast; also in Europe.
ILLUSTRATIONS: Bull. Herb. Fr. *pl. 50* (as *A. croceus*); Gill. Champ. Fr. *pl. 133* (*332*); Mycologia **2**: *pl. 27, f. 8;* Ricken, Blätterp. Deutschl. *pl. 8, f. 4;* Schaeff. Fung. Bavar. *pl. 2*.
EXSICCATI: Ellis, N. Am. Fungi *1013;* Sydow, Myc. Mar. *2712*.

11. **Hydrocybe ruber** (Peck) Murrill.

Hygrophorus ruber Peck, Bull. N. Y. State Mus. 116: 32. 1907.

Pileus thin, conic, commonly unexpanded, acute or subobtuse, cuspidate or narrowly umbonate, 1.5–5 cm. broad; surface very viscid or glutinous, bright-red, not turning black on drying: lamellae narrow, ascending, adnexed, subdistant, yellow or yellowish-brown: spores subellipsoid, 6–7-5 × 4–5 μ: stipe equal, viscid, hollow, concolorous, 2.5 cm. long, 2 mm. thick.

TYPE LOCALITY: Ellis, Massachusetts.
HABITAT: Among mosses in wooded swamps.
DISTRIBUTION: Massachusetts and the mountains of North Carolina.

12. **Hydrocybe cuspidata** (Peck) Murrill.

Hygrophorus cuspidatus Peck, Bull. Torrey Club 24: 141. 1897.

Pileus thin, subcampanulate, cuspidate, 1.5–2.5 cm. broad; surface glabrous, red: lamellae broad, ventricose, yellow: spores ellipsoid, 12–16 × 6–8 μ: stipe slender, equal, glabrous, hollow, 2.5–5 cm. long, 2 mm. thick.

TYPE LOCALITY: Ottowa, Canada.
HABITAT: On the ground.
DISTRIBUTION: Known only from the type locality.

13. **Hydrocybe minutula** (Peck) Murrill.

Hygrophorus minutulus Peck, Bull. N. Y. State Mus. **1**[2]: 9. 1888.

Pileus thin, submembranous, convex or expanded, subumbilicate, 6–10 mm. broad; surface bright-red, viscid, and distantly striatulate when moist, pale-red or yellowish when dry: lamellae rather broad, subdistant, sometimes ventricose, adnate or subsinuate and slightly decurrent, whitish, tinged with red or yellow: spores narrowly ellipsoid, 10 × 5 μ: stipe short, slender, fragile, solid, viscid when moist, yellowish, stuffed, 12–20 mm. long, 1 mm. thick.

TYPE LOCALITY: Sandlake, New York.
HABITAT: Grassy ground in pastures or among mosses.
DISTRIBUTION: New York.

14. **Hydrocybe psittacina** (Schaeff.) P. Karst. Bidr. Finl. Nat. Folk **32**: 237. 1879.

Agaricus psittacinus Schaeff. Fung. Bavar. **4**: Ind. 70. 1774.
Hygrophorus psittacinus Fries, Epicr. Myc. 332. 1838.

Pileus thin, convex to expanded, umbonate, striatulate on the margin, 1–3 cm. broad; surface smooth, reddish or yellow, covered with evanescent, greenish slime: context white, very thin; lamellae adnate-decurrent, thick, broad, ventricose, yellow, tinged with green: spores ellipsoid, hyaline, 7–8 × 5–6 μ: stipe cylindric, subequal, tough, viscid, concolorous, 2.5–4 cm. long, 3–4 mm. thick.

TYPE LOCALITY: Europe.
HABITAT: In pastures and open woods.
DISTRIBUTION: New England to North Carolina and west to Wisconsin; also in Europe.
ILLUSTRATIONS: Boudier, Ic. Myc. *pl. 42;* Bull. Herb. Fr. *pl. 545, f. 1* (as *Agaricus cameleon*); Gill. Champ. Fr. *pl. 137* (*346*); Hussey, Ill. Brit. Myc. **1**: *pl. 49;* Mycologia **2**: *pl. 27, f. 4;* Ricken, Blätterp. Deutschl. *pl. 8, f. 6;* Schaeff. Fung. Bavar. *pl. 301;* Sow. Engl. Fungi *pl. 82.*

15. **Hydrocybe laeta** (Pers.) P. Karst. Bidr. Finl. Nat. Folk. **32**: 233. 1879.

Agaricus laetus Pers. Obs. Myc. **2**: 48. 1799.
Hygrophorus laetus Fries, Epicr. Myc. 329. 1838.

Pileus thin, convex to plane, 1–2.5 cm. broad; surface smooth, viscid, subshining, incarnate, white, or rarely varying to pale-fuliginous, not expallent: lamellae subdecurrent, distant, thin, paler than the pileus: spores 9–10 × 6–8 μ: stipe equal, tough, fulvous, 5–8 cm. long, 4 mm. thick.

TYPE LOCALITY: Europe.
HABITAT: On the ground among mosses or in moist, shaded soil.
DISTRIBUTION: Maine to North Carolina; Bermuda; also in Europe.
ILLUSTRATIONS: Fries, Ic. Hymen. *pl. 167, f. 2;* Gill. Champ. Fr. *pl. 132* (*338*); Ricken, Blätterp. Deutschl. *pl. 8, f. 8.*

16. **Hydrocybe laricina** (Peck) Murrill.

Hygrophorus laricinus Peck, Mem. N. Y. State Mus. **3**: 146. 1901.

Pileus fleshy, convex or nearly plane, sometimes umbonate, gregarious, 1.5–2.5 cm. broad; surface viscid when moist, reddish, tawny-red, or grayish-red: context white, slightly yellow under the pellicle, the taste slightly disagreeable when raw, good when cooked; lamellae adnate or subdecurrent, distant, whitish: spores ellipsoid, 6–7.5 × 4–5 μ: stipe firm, equal, white, hollow, 2.5–5 cm. long, 4–6 mm. thick.

TYPE LOCALITY: Warrensburg, New York.
HABITAT: Under tamarack trees.
DISTRIBUTION: Known only from the type locality.
ILLUSTRATIONS: Mem. N. Y. State Mus. **3**: *pl. 51, f. 1–12.*

17. **Hydrocybe miniata** (Scop.) Murrill.

Agaricus miniatus Scop. Fl. Carn. ed. 2. **2**: 442. 1772.
Agaricus coccineus Schaeff. Fung. Bavar. **4**: Ind. 70. 1774. Not *A. coccineus* Scop. 1772.
Hygrophorus coccineus Fries, Epicr. Myc. 330. 1838.

Hydrocybe coccinea P. Karst. Bidr. Finl. Nat. Folk **32**: 234. 1879.
Hygrophorus miniatus Schroet. Krypt.-Fl. Schles. **3**[1]: 528. 1889.

Pileus thin, fragile, convex to plane, obtuse, 2–5 cm. broad; surface glabrous, viscid, scarlet, fading to pale-red, and finally yellowish: context whitish or yellowish, edible; lamellae adnate or with a decurrent tooth, distant, interveined, pale-yellow or reddish: spores ellipsoid, hyaline, 6–10 × 4–6 μ: stipe cylindric or compressed, glabrous, hollow, scarlet above, yellow below, 3–5 cm. long, 3 mm. thick.

TYPE LOCALITY: Carniola.
HABITAT: In moist pastures and on mossy banks.
DISTRIBUTION: Greenland to Alabama and west to California; also in Europe.
ILLUSTRATIONS: Boudier, Ic. Myc. *pl. 38, 40;* Mycologia **2**: *pl. 27, f. 7;* McIlv. Am. Fungi *pl. 136, f. 6;* Schaeff. Fung. Bavar. *pl. 302* (as *A. coccineus*).
EXSICCATI: Sydow, Myc. Mar. *2713;* Thüm. Fungi Austr. *910.*

18. **Hydrocybe flammea** (Scop.) Murrill.

Agaricus flammeus Scop. Fl. Carn. ed. 2. **2**: 443. 1772.
Hygrophorus miniatus Fries, Epicr. Myc. 330. 1838.
Hygrophorus congelatus Peck, Ann. Rep. N. Y. State Cab. **23**: 114. 1872.
Hydrocybe miniata P. Karst. Bidr. Finl. Nat. Folk **32**: 234. 1879.

Pileus fragile, regular, convex to plane or umbilicate, 1–5 cm. broad; surface glabrous or minutely squamulose, slightly viscid, scarlet, rarely yellow, soon fading: context yellow, mild, tender, edible; lamellae adnate or very slightly decurrent, distant, yellow, often tinged with red: spores ellipsoid, hyaline, 8–9 × 4–6 μ: stipe slender, equal, glabrous, concolorous or slightly paler, stuffed or partly hollow, 2–7 cm. long, 2–4 mm. thick.

TYPE LOCALITY: Carniola.
HABITAT: In damp woods or swamps.
DISTRIBUTION: Throughout temperate North America; mountains of Jamaica; also in Europe.
ILLUSTRATIONS: Ann. Rep. N. Y. State Mus. **48**: *pl. 28, f. 1–10;* Gill. Champ. Fr. *pl. 342;* Hard, Mushrooms *f. 172;* Mycologia **2**: *pl. 27, f. 9;* Ricken, Blätterp. Deutschl. *pl. 8, f. 9.*
EXSICCATI: Ellis, N. Am. Fungi *303*; Sydow, Myc. Mar. *705.*

19. **Hydrocybe punicea** (Fries) P. Karst. Bidr. Finl. Nat. Folk **32**: 235. 1879.

Agaricus puniceus Fries, Syst. Myc. **1**: 104. 1821.
Hygrophorus puniceus Fries, Epicr. Myc. 331. 1838.

Pileus fragile, conic to subexpanded, obtuse or slightly depressed, 5–10 cm. broad; surface glabrous, viscid, not striate, scarlet, fading out with age, especially at the center: context white, tinged with red beneath the pellicle, the taste mild, edible; lamellae slightly adnexed, broad, thick, distant, yellow, often becoming reddish: spores ellipsoid, hyaline, 8–10 × 4–5 μ: stipe stout, subequal, glabrous, slightly striate, concolorous or paler, white at the base, hollow, 5–8 cm. long, 1–2 cm. thick.

TYPE LOCALITY: Europe.
HABITAT: In moist places in woods.
DISTRIBUTION: New England to North Carolina and west to Wisconsin; also in Europe.
ILLUSTRATIONS: Bull. N. Y. State Mus. **5**: *pl. 58, f. 1–7;* Fries, Sv. Aetl. Svamp. *pl. 77;* Mem. N. Y. State Mus. **3**: *pl. 52, f. 1–7;* Mycologia **2**: *pl. 27, f. 5;* Ricken, Blätterp. Deutschl. *pl. 8, f. 2.*
EXSICCATI: Sydow, Myc. Mar. *4602.*

20. **Hydrocybe lurida** (Berk. & Curt.) Murrill.

Hygrophorus luridus Berk. & Curt. Jour. Bot. & Kew Misc. **1**: 99. 1849.

Pileus campanulate, umbonate, about 2 cm. broad; surface very viscid, pale-brown, darker at the center, margin striate, crenate: lamellae shortly adnate, ventricose, venose-connected, thick, white: stipe fistulose, composed of longitudinal fibers, pale-brown, about 3 cm. long and 2 mm. thick.

TYPE LOCALITY: South Carolina.
HABITAT: In low swampy places.
DISTRIBUTION: Massachusetts, New York, and South Carolina.

21. **Hydrocybe Davisii** (Peck) Murrill.

Hygrophorus Davisii Peck, Bull. Torrey Club **33**: 214. 1906.

Pileus membranous, fragile, convex, sometimes centrally depressed, gregarious, 1–1.2 cm. broad; surface glabrous, very viscid, olive-brown variegated with olive-green when young and fresh, assuming a yellowish-buff color with a faint tint of pink when dried, margin even when young, striate when mature: lamellae unequal, decurrent, distant, thin, grayish-white: spores broadly ellipsoid, hyaline, 6–7 × 4–5 μ: stipe slender, flexuous, fragile, equal or slightly tapering upward, glabrous, viscid, grayish-white, becoming brownish, hollow, 2–3 cm. long, 1.5–2 mm. thick.

TYPE LOCALITY: Stow, Massachusetts.
HABITAT: Damp places under ferns in deciduous woods.
DISTRIBUTION: Massachusetts.

22. **Hydrocybe immutabilis** (Peck) Murrill.

Hygrophorus immutabilis Peck, Ann. Rep. N. Y. State Mus. **51**: 292. 1898.

Pileus thin, conic, convex, umbonate, 1.5–2.5 cm. broad; surface greenish-brown or yellowish-brown, not changing color on drying, margin often striate when dry: lamellae subdistant, whitish or yellowish: spores ellipsoid, 10–12 × 6–7 μ: stipe slender, glabrous, yellow, hollow, 2.5–5 cm. long, 3–4 mm. thick.

TYPE LOCALITY: Raybrook, Essex County, New York.
HABITAT: Rather dry sandy or heathy places.
DISTRIBUTION: New York.

23. **Hydrocybe californica** Murrill, sp. nov.

Pileus conic, cuspidate, gregarious, 5 cm. broad; surface orange or reddish, smooth, glabrous, decidedly viscid, not blackening on drying, margin somewhat lobed, concolorous: context very thin; lamellae adnate, yellow or nearly white, rather broad and distant: spores ellipsoid, smooth, hyaline, 9–12 × 6–8 μ: stipe thick, equal, concolorous, hollow, smooth, glabrous, somewhat viscid, 7–9 cm. long, about 1 cm. thick.

Type collected under an oak at Berkeley, California, January 20, 1914, *L. S. Smith 413* (herb. N. Y. Bot. Gard.).
HABITAT: On the ground under oaks and redwoods.
DISTRIBUTION: California.

24. **Hydrocybe constans** Murrill, Mycologia **4**: 208. 1912.

Hygrophorus constans Murrill, Mycologia **4**: 217. 1912.

Pileus convex, slightly umbilicate, gregarious, 1.5 cm. broad; surface glabrous, shining, not viscid, uniformly red, unchanging on drying, striate from the margin half way to the center; lamellae adnate with a decurrent tooth, rather distant, plane or arcuate, testaceous-flavous; spores ellipsoid, smooth, hyaline, 7 × 4 μ; stipe hollow, subequal, smooth, glabrous, concolorous above, ochraceous at the base, 7 cm. long, 5 mm. thick.

TYPE LOCALITY: Mill City, Oregon.
HABITAT: In moss in low woods.
DISTRIBUTION: Known only from the type locality.

25. **Hydrocybe rosea** Murrill, Mycologia **3**: 197. 1911.

Hygrophorus roseus Murrill, Mycologia **4**: 332. 1912.

Pileus convex with an umbilicate center, resembling *Omphalopsis* in shape, solitary, 1 cm. broad, 5 mm. high; surface smooth, glabrous, roseous to incarnate, margin entire or rarely lobed, decurved: context very thin, allowing the lamellae to show through on the upper side; lamellae decurrent, arcuate, white, stained with red: spores ovoid, smooth, hyaline, 10–13 × 7–9 μ: stipe smooth, cylindric, paler than the pileus below, deep-red at the apex, where it is much enlarged, 1.5 cm. long, 1 mm. thick below.

TYPE LOCALITY: Sir John Peak, Jamaica.
HABITAT: In moss on a decayed log.
DISTRIBUTION: Known only from the type locality.

26. **Hydrocybe flavolutea** Murrill, Mycologia **3**: 196. 1911.

Hygrophorus flavoluteus Murrill, Mycologia **4**: 332. 1912.

Pileus convex, solitary, 1.3 cm. broad, 5 mm. high; surface luteous, with faint traces of red, polished, slightly viscid, radiate-striate: lamellae flavous, slightly ventricose, rather close, several times inserted, apparently free, but really connected by slender threads of tissue across the disk to which the stipe is attached: spores globose, regular, hyaline, uninucleate, smooth, 4–5 μ: stipe cylindric, equal, smooth, glabrous, citrinous, whitish-tomentose and slightly enlarged at the base, 2.2 cm. long, 1.5 mm. thick.

TYPE LOCALITY: Cinchona, Jamaica.
HABITAT: In soil.
DISTRIBUTION: At high elevations in Jamaica and eastern Mexico.

27. **Hydrocybe aurantia** Murrill, Mycologia **3**: 195. 1911.

Hygrophorus aurantius Murrill, Mycologia **4**: 332. 1912.

Pileus obconic, small, solitary, 1.5 cm. broad; surface smooth or slightly striate, glabrous, aurantiacous: lamellae adnate, rather broad and distant, subconcolorous: spores globose, smooth, hyaline, 3–5 μ: stipe slightly tapering downward, glabrous, aurantiacous, pruinose at the apex, 2.5 cm. long, about 2 mm. thick.

TYPE LOCALITY: Morce's Gap, Jamaica.
HABITAT: On the ground in woods.
DISTRIBUTION: Known only from the type locality.

28. **Hydrocybe hondurensis** Murrill, Mycologia **3**: 197. 1911.

Hygrophorus hondurensis Murrill, Mycologia **4**: 332. 1912.

Pileus convex to plane, slightly depressed, solitary, 1–1.5 cm. broad; surface luteous, very viscid, radiate-striate: lamellae short-decurrent, rather narrow, inserted: spores ovoid, smooth, hyaline, 5 $\times$ 3.5 μ: stipe equal, concolorous, very viscid, 3–4 cm. long, 1–2 mm. thick.

TYPE LOCALITY: British Honduras.
HABITAT: In rich soil.
DISTRIBUTION: Known only from the type locality.

29. **Hydrocybe subminiata** Murrill, Mycologia **3**: 198. 1911

Hygrophorus subminiatus Murrill, Mycologia 4: 332. 1912.

Pileus convex to plane, at length irregular, 1.5 cm. broad; surface viscid, smooth, miniatous, varying slightly in places, margin undulate: lamellae decurrent, few, whitish to ochraceous: spores oblong-ellipsoid, often constricted at the middle, smooth, hyaline, about 9 $\times$ 5 μ: stipe terete, crooked, slightly enlarged above, glabrous, luteous, 3 cm. long, 2 mm. thick.

TYPE LOCALITY: Chester Vale, Jamaica.
HABITAT: On shaded banks or under tree-ferns.
DISTRIBUTION: At rather high elevations in Jamaica and probably in Cuba.

30. **Hydrocybe trojana** Murrill, Mycologia **3**: 198. 1911.

Hygrophorus trojanus Murrill, Mycologia **4**: 332. 1912.

Pileus subhemispheric to convex, solitary, 1–1.5 cm. broad, 3 mm. high; surface smooth, viscid when wet, ferruginous: lamellae decurrent, violaceous, distant, rather broad, two or three times inserted: spores ellipsoid, smooth, hyaline, 7–9 $\times$ 4–5 μ: stipe glabrous, cylindric, latericeous above, paler below, changing to flavous at the base, 4 cm. long, 2.5 mm. thick.

TYPE LOCALITY: Troy and Tyre, Jamaica.
HABITAT: On the ground.
DISTRIBUTION: Cockpit Country, Jamaica.

31. **Hydrocybe subflavida** Murrill, Mycologia **3**: 197. 1911.

Hygrophorus subflavidus Murrill, Mycologia **4**: 332. 1912.

Pileus conic to subcampanulate, umbonate, gregarious, reaching 5 cm. broad and 3 cm. high; surface pale-flavous, dull-luteous in very young stages and on the umbo, smooth, becoming

striate in old or wet specimens: lamellae adnate with a decurrent tooth, broad, ventricose, rather distant, pale-yellow: spores globose, smooth, hyaline, 5 μ: stipe cylindric, equal, pale-flavous, glabrous, 4–5 cm. long, 4–7 mm. thick.

TYPE LOCALITY: Morce's Gap, Jamaica.
HABITAT: On the ground under tree-ferns.
DISTRIBUTION: Known only from the type locality.

32. **Hydrocybe Earlei** Murrill, Mycologia **3**: 196. 1911.

Hygrophorus Earlei Murrill, Mycologia 4: 332. 1912.

Pileus convex, solitary, 3 cm. broad; surface glabrous, silky-shining, not striate, pale-reddish-yellow: context yellow, mild; lamellae slightly adnexed, crowded, broad, ventricose, cremeous: spores globose, smooth, hyaline, 7 μ: stipe somewhat flattened, equal, hollow, glabrous, shining, pale-yellow, 5–6 cm. long, 4–6 mm. thick.

TYPE LOCALITY: Herradura, Cuba.
HABITAT: On the ground in a pasture.
DISTRIBUTION: Known only from the type locality.

33. **Hydrocybe subcaespitosa** Murrill, Mycologia **3**: 197. 1911.

Hygrophorus subcaespitosus Murrill, Mycologia 4: 332. 1912.

Pileus convex to plane or depressed, subcespitose, 2–3 cm. broad; surface smooth, glabrous, ruber when young, miniatous when older: lamellae white to stramineous, adnate or slightly decurrent, broad, inserted: spores oblong-ellipsoid, smooth, hyaline, 8–9 $\times$ 5 μ: stipe thick, cylindric to slightly flattened, smooth, glabrous, luteous or paler yellowish, about 3 cm. long, 5 mm. or more thick.

TYPE LOCALITY: Morce's Gap, Jamaica.
HABITAT: In rich soil under tree-ferns.
DISTRIBUTION: Known only from the type locality.

34. **Hydrocybe bella** (Massee) Murrill, Mycologia **3**: 196. 1911.

Hygrophorus bellus Massee, Jour. Bot. 30: 161. 1892.

Pileus fleshy, convex-plane, slightly depressed at the center, 4–5 cm. broad; surface scarlet to expallent, smooth, glabrous: lamellae decurrent, distant, thick, interveined, yellow tinged with orange: spores ellipsoid, hyaline, 18 $\times$ 10 μ: stipe equal or enlarged at the apex, glabrous, hollow, yellowish with scarlet striae, 5 cm. long, 8 mm. thick.

TYPE LOCALITY: Nariaqua Valley, St. Vincent.
HABITAT: On the ground in woods.
DISTRIBUTION: Known only from the type locality.
ILLUSTRATIONS: Jour. Bot. **30**: *pl. 321, f. 1–4, 8.*

DOUBTFUL SPECIES

Hygrophorus aurantiaco-luteus Berk. & Curt. Ann. Mag. Nat. Hist. III. **4**: 293. 1859. Described from specimens collected among mosses in Connecticut by Sprague. Peck omitted this species from his New York list because specimens so determined were doubtful. The types at Kew are fairly well preserved but are too small for satisfactory comparison, the pileus being only 3 mm. in diameter.

Hygrophorus cerasinus (Berk.) Fries, Hymen. Eur. 410. 1874. (*Agaricus cerasinus* Berk. in Smith, Engl. Fl. 5^2: 12. 1836.) Reported by Ellis from New Jersey, occurring on the ground in pine woods. These specimens were distributed by Ellis in his N. Am. Fungi *907*.

Hygrophorus haematocephalus Berk. & Curt. Ann. Mag. Nat. Hist. II. **12**: 424. 1853. Described from specimens collected in pine woods in South Carolina. The pileus is umbilicate, blood-red; lamellae adnate, yellow; stipe red, then yellow. The types at Kew are much like *Chanterel cinnabarinus*, but the lamellae are not so thick. There is also a resemblance to *Hydrocybe laeta*, but with such old and faded specimens it is difficult to make successful comparisons.

Hygrophorus mucilaginosus Berk. & Curt. Jour. Bot. & Kew Misc. **1**: 98. 1849. De-

scribed from specimens collected in low ground in South Carolina. The types at Kew, which are well preserved, are similar in size, shape, and appearance to *Camarophyllus Cantharellus*. This species is not listed in Saccardo.

Hygrophorus ohiensis Mont. Syll. Crypt. 135. 1856. Described from specimens collected on buried wood near Columbus, Ohio, by Sullivant. The specimens at Paris are very poor and are mixed with *Coprinus micaceus*. The species is described as 2.5 cm. broad, yellow with purplish disk; lamellae adnexed, rose-colored to brown; stipe concolorous.

Hygrophorus stenophyllus Mont. Syll. Crypt. 135. 1856. Described from specimens collected in meadows and fields near Columbus, Ohio, by Sullivant. The pileus is infundibuliform, cespitose, white; lamellae decurrent, very crowded and very narrow; stipe very short. The specimens at Paris are too poor to compare successfully.

38. CAMAROPHYLLUS (Fries) P. Karst. Bidr. Finl. Nat. Folk 32: 224. 1879.

Hygrophorus § *Camarophyllus* Fries, Epicr. Myc. 325. 1838.

Fleshy, firm, putrescent, solitary or gregarious; surface moist but not viscid, usually without brilliant colors: lamellae waxy, decurrent or adnexed: spores hyaline: stipe central, fleshy, usually solid: veil none.

Type species, *Camarophyllus caprinus* (Scop.) P. Karst.

I. SPECIES OCCURRING IN TEMPERATE NORTH AMERICA, EXCEPT THOSE CONFINED TO THE PACIFIC COAST

Pileus entirely white.
  Pileus 1.5–2.5 cm. broad. — 1. *C. borealis.*
  Pileus 2.5–6 cm. broad.
    Spores 8–11 × 5–6 μ. — 2. *C. virgineus.*
    Spores 4 × 3 μ. — 3. *C. angustifolius.*
Pileus white or whitish, yellowish at the center, 1.5–2.5 cm. broad. — 4. *C. obconicus.*
Pileus whitish, tinged with reddish-brown; spores globose. — 5. *C. sphaerosporus.*
Pileus pale-lilac when moist, grayish-white when dry. . — 6. *C. pallidus.*
Pileus melleous, ornamented with brown scales; cespitose. — 7. *C. caespitosus.*
Pileus tawny or buff, varying to white or grayish, usually turbinate; lamellae long-decurrent. — 8. *C. fulvosus.*
Pileus golden-yellow or yellowish-brown when moist, ochraceous or tinged with green when dry; the odor somewhat mephitic. — 9. *C. auratocephalus.*
Pileus some shade of red or orange, varying to yellow in *C. Cantharellus*.
  Pileus pale-pink or grayish-red, minutely floccose-squamulose; lamellae decurrent. — 10. *C. subrufescens.*
  Pileus light-orange, tomentose-squamose; lamellae emarginate-adnate. — 11. *C. squamulosus.*
  Pileus orange, varying to red or yellow, small, umbilicate; lamellae very decurrent and stipe very slender. — 12. *C. Cantharellus.*
Pileus some shade of grayish-brown or blackish-brown.
  Pileus 1–2.5 cm. broad.
    Pileus grayish-brown.
      Margin strongly decurved; stipe solid, glabrous. — 13. *C. albipes.*
      Margin recurved; stipe hollow, subpruinose. — 14. *C. recurvatus.*
    Pileus fuliginous. — 15. *C. Peckianus.*
  Pileus 2.5–5 cm. broad.
    Pileus umbilicate or centrally depressed, grayish-brown. — 16. *C. basidiosus.*
    Pileus convex, often obtuse.
      Lamellae decurrent; spores 10–13 μ long. — 17. *C. nigridius.*
      Lamellae adnate or slightly decurrent; spores 7.5–10 μ long. — 18. *C. Burnhami.*

II. SPECIES OCCURRING ON THE PACIFIC COAST

Pileus uniformly cream-colored; spores 5–6 × 3.5–4 μ. — 19. *C. cremicolor.*
Pileus tawny or buff, varying to white or grayish; spores 6–8 × 5–6 μ. — 8. *C. fulvosus.*

III. SPECIES OCCURRING IN TROPICAL NORTH AMERICA

Pileus white, with a very long umbo. — 20. *C. albo-umbonatus.*
Pileus orange, depressed at the center. — 12. *C. Cantharellus.*

1. Camarophyllus borealis (Peck) Murrill.

Hygrophorus borealis Peck, Ann. Rep. N. Y. State Mus. 26: 64. 1874.

Pileus thin, convex to expanded, 1.5–2.5 cm. broad; surface glabrous, moist, white, margin

somewhat striatulate: lamellae arcuate-decurrent, distant, white: spores ellipsoid, 8–10×5–7 μ: stipe equal or obconic, glabrous, white, stuffed or solid, 5 cm. long, 2 mm. thick.

TYPE LOCALITY: Croghan, New York.
HABITAT: On the ground in woods.
DISTRIBUTION: Massachusetts, Connecticut, New York, and New Jersey.

2. **Camarophyllus virgineus** (Wulfen) Murrill.

Agaricus virgineus Wulfen in Jacq. Misc. Austr. 2: 104. 1781.
Hygrophorus virgineus Fries, Epicr. Myc. 327. 1838.

Pileus fleshy, convex-plane, obtuse, depressed, 2.5–6 cm. broad; surface white, areolate-rimose when moist, floccose when dry: lamellae decurrent, distant, thick: spores 8–11×4–6 μ: stipe firm, short, white, stuffed, tapering downward, 2–6 cm. long, 4–12 mm. thick.

TYPE LOCALITY: Austria.
HABITAT: In grassy or mossy places.
DISTRIBUTION: Greenland to North Carolina and west to Wisconsin.
ILLUSTRATIONS: Boudier, Ic. Myc. *pl. 37;* Bull. N. Y. State Mus. 5: *pl. 58, f. 8–12;* Jacq. Misc. Austr. 2: *pl. 15, f. 1;* Sow. Engl. Fungi *pl. 32;* Vitt. Descr. Funghi Mang. *pl. 32, f. 2.*
EXSICCATI: Desmaz. Pl. Crypt. *2022, 2023;* Erb. Critt. Ital. *674;* Sydow, Myc. Mar. *3308;* Thüm. Fungi Austr. *911.*

3. **Camarophyllus angustifolius** Murrill, sp. nov.

Pileus thick, fleshy, expanded, 4 cm. broad; surface dry, glabrous, white, margin not striate: context white, mild to the taste; lamellae long-decurrent, forking, rather crowded, narrow, white: spores minute, ellipsoid, 4 × 3 μ: stipe cylindric, subglabrous, white, solid, 3 cm. long, 8 mm. thick.

Type collected on the ground in woods at Fort Lee, New Jersey, September, 1902, *F. S. Earle & W. A. Murrill 1387* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

4. **Camarophyllus obconicus** (Peck) Murrill.

Hygrophorus obconicus Peck, Bull. N. Y. State Mus. 131: 36. 1909.

Pileus fleshy, thick at the center, obconic, convex or nearly plane, becoming depressed at the center, cespitose, 1.5–2.5 cm. broad; surface glabrous, pruinose, white or whitish, yellowish at the center, becoming pale-alutaceous with age, margin involute: context white; lamellae thick, distant, ventricose, very decurrent, white: spores subglobose, 4–6 × 4–5 μ: stipe straight or flexuous, equal or tapering downward, brittle, stuffed, white, 2–2.5 cm. long, 6–10 mm. thick.

TYPE LOCALITY: Stow, Massachusetts.
HABITAT: Among sphagnum in swamps.
DISTRIBUTION: Known only from the type locality.

5. **Camarophyllus sphaerosporus** (Peck) Murrill.

Hygrophorus sphaerosporus Peck, Bull. Torrey Club 22: 486. 1895.

Pileus fleshy, thick at the center, subobconic, convex, obtuse or subumbonate, 1–2.7 cm. broad; surface whitish tinged with reddish-brown, margin incurved: context firm, white, with unpleasant odor in drying; lamellae adnate or subdecurrent, subdistant, broad: spores globose, 6–8 μ: stipe flexuous, floccose, glabrous, concolorous, solid, enlarged at the base, 2.5–5 cm. long, 5–7 mm. thick.

TYPE LOCALITY: Iowa.
HABITAT: On the ground.
DISTRIBUTION: Known only from the type locality.

6. **Camarophyllus pallidus** (Peck) Murrill.

Hygrophorus pallidus Peck, Bull. Torrey Club 29: 69. 1902.

Pileus thin, convex to subplane, 1.5–3 cm. broad; surface glabrous, hygrophanous, pale-lilac when moist, grayish-white when dry, margin decurved, wavy, striatulate when moist: lamellae adnate or subdecurrent, distant, rather thick, arcuate, concolorous when moist, sub-

cinereous when dry: spores subglobose, hyaline, 5–6 × 4–5 μ: stipe slender, equal or narrowed downward, glabrous, white, hollow, 2.5–5 cm. long, 2–4 mm. thick.

TYPE LOCALITY: Massachusetts.
HABITAT: Mossy or swampy ground.
DISTRIBUTION: Known only from the type locality.

7. **Camarophyllus caespitosus** Murrill.

Hydrocybe caespitosa Murrill, Mycologia **6**: 2. 1914.
Hygrophorus caespitosus Murrill, Mycologia **6**: 2. 1914.

Pileus convex to obconic, depressed at the center, loosely or densely clustered, about 2–2.5 cm. broad and 1.5 cm. thick; surface dry, melleous, ornamented with brown, innate, pointed scales, which are denser on the disk: context flavous, mild; lamellae broad, ventricose, distant, sinuate-decurrent, stramineous to cremeous: spores ellipsoid, pointed at one end, smooth, hyaline, granular, 7.5–8.5 × 4–5 μ: stipe equal or enlarged above, glabrous, shining, citrinous, spongy within, 4–5 cm. long, 3–5 mm. thick.

TYPE LOCALITY: New York City.
HABITAT: Among moss in pastures.
DISTRIBUTION: New York and North Carolina.

8. **Camarophyllus fulvosus** (Bolt.) Murrill.

Agaricus fulvosus Bolt. Hist. Fung. 56. 1788.
Agaricus pratensis Pers. Syn. Fung. 304. 1801. Not *A. pratensis* Scop. 1772
Agaricus turbinatus Schum. Enum. Pl. Saell. **2**: 317. 1803.
Hygrophorus pratensis Fries, Epicr. Myc. 326. 1838.
Camarophyllus pratensis P. Karst. Bidr. Finl. Nat. Folk **32**: 225. 1879.
Hydrocybe pratensis Murrill, Mycologia **6**: 2. 1914.

Pileus firm, convex to expanded, often turbinate, 2–5 cm. broad; surface glabrous, not viscid, buff, tawny, white, or grayish: context thick, firm, white, edible, of delicate flavor; lamellae long-decurrent, thick, distant, often interveined, white or yellowish: spores subglobose to ellipsoid, hyaline, 6–8 × 5–6 μ: stipe short, smooth, equal or tapering downward, solid or stuffed, white or subconcolorous, 3–5 cm. long, 1 cm. thick.

TYPE LOCALITY: Halifax, England.
HABITAT: In woods and pastures.
DISTRIBUTION: Canada to Alabama and west to Oregon and California; also in Europe.
ILLUSTRATIONS: Ann. Rep. N. Y. State Mus. **48**: *pl. 28, f. 11–17;* Bres. Funghi Mang. *pl. 69;* Bull. Herb. Fr. *pl. 587, f. 1;* L. Dufour, Atl. Champ. *pl. 43;* Fries, Sv. Aetl. Svamp. *pl. 30;* Gill. Champ. Fr. *pl. 131* (*345*); Mycologia **2**: *pl. 27, f. 1;* **6**: *pl. 113, f. 3;* Sow. Engl. Fungi *pl. 141* (as *A. miniatus*).

9. **Camarophyllus auratocephalus** (Ellis) Murrill.

Agaricus (*Clitocybe*) *auratocephalus* Ellis, Bull. Torrey Club **6**: 75. 1876.
Clitocybe chrysocephala Sacc. Syll. Fung. **5**: 190. 1887.
Hygrophorus mephiticus Peck, Bull. Torrey Club **33**: 213. 1906.

Pileus obtuse-conic, expanding to convex, with a fleshy umbo, gregarious or subcespitose, about 3.5 cm. broad; surface smooth but of fibrous texture, at length more or less rimose-striate, golden-yellow: context having a strong, peculiar smell when fresh, and especially when drying: lamellae broad, ventricose, fleshy, subsinuate with a decurrent tooth, not crowded, golden-yellow, becoming orange-red in drying: spores short-oblong, somewhat irregular in shape, 10 μ long: stipe usually compressed and crooked, attenuate at both ends, hollow, smooth, brittle, golden-yellow, 7.5–10 cm. long, 5–6 mm. thick.

TYPE LOCALITY: Newfield, New Jersey.
HABITAT: In swampy ground.
DISTRIBUTION: Massachusetts, southern New York, New Jersey, and the mountains of western North Carolina.
EXSICCATI: Ellis & Ev. N. Am. Fungi *1911*.

10. **Camarophyllus subrufescens** (Peck) Murrill.

Hygrophorus subrufescens Peck, Bull. N. Y. State Mus. 67: 23. 1903.

Pileus fleshy, but thin on the margin, convex or nearly plane, about 2.5 cm. broad; surface dry, minutely floccose-squamulose, pale-pink or grayish-red: context whitish, faintly tinged

with pink, the taste mild: lamellae decurrent, subdistant, whitish: spores ellipsoid, 7.5 × 5 μ: stipe rather long, flexuous, equal or nearly so, glabrous, white, solid, 4–8 cm. long, 4–8 mm. thick.

TYPE LOCALITY: Port Jefferson, Long Island, New York.
HABITAT: Among fallen leaves in woods.
DISTRIBUTION: Known only from the type locality.
ILLUSTRATIONS: Bull. N. Y. State Mus. 67: *pl. M, f. 1–6.*

11. **Camarophyllus squamulosus** (Ellis & Ev.) Murrill.

Hygrophorus squamulosus Ellis & Ev. Proc. Acad. Phila. **1893**: 440. 1894.

Pileus fleshy, fragile, hemispheric to convex-expanded, 3–4 cm. broad; surface light-orange, tomentose-squamose, not viscid, margin paler: lamellae emarginate-adnate with a decurrent tooth, subcrowded, unequal, broad, light-yellow, the edges obtuse, the interspaces rugose: spores oblong-ellipsoid, hyaline, 5–6 × 3–3.5 μ: stipe light-orange, thick, often compressed and incurved, subfarinose at the apex, slightly tapering upward, 5 cm. long, 5–7 mm. thick.

TYPE LOCALITY: Newfield, New Jersey.
HABITAT: Swampy woods among mosses.
DISTRIBUTION: Known only from the type locality.

12. **Camarophyllus Cantharellus** (Schw.) Murrill.

Agaricus (Omphalia) Cantharellus Schw. Schr. Nat. Ges. Leipzig **1**: 88. 1822.
Hygrophorus Cantharellus Fries, Epicr. Myc. 329. 1838.
Hydrocybe Cantharellus Murrill, Mycologia **3**: 196. 1911.

Pileus thin, convex to umbilicate, gregarious, 1.5–2.5 cm. broad; surface glabrous or minutely squamulose, not viscid, orange, varying to red or yellow: lamellae rather broad, distant, arcuate, very decurrent, whitish or yellowish, sometimes tinged with red: spores ellipsoid, smooth, hyaline, 7.5–10 × 5–6 μ: stipe slender, fragile, glabrous, stuffed or hollow, red, orange, or yellow, 2.5–7.5 cm. long, 2–4 mm. thick.

TYPE LOCALITY: North Carolina.
HABITAT: Damp soil or decayed wood in woods or open places.
DISTRIBUTION: Maine to Alabama and west to Minnesota; Bermuda and at high elevations in Jamaica.
ILLUSTRATIONS: Ann. Rep. N. Y. State Mus. **54**: *pl. 76, f. 8–20.*
EXSICCATI: Ellis & Ev. N. Am. Fungi *1910.*

13. **Camarophyllus albipes** (Peck) Murrill.

Hygrophorus albipes Peck, Bull. Torrey Club **25**: 323. 1898.

Pileux convex, 1.5 cm. broad; surface glabrous, grayish-brown, margin strongly decurved: context white; lamellae very decurrent, subdistant, narrow, arcuate, whitish, becoming darker with age: spores subglobose, 5–6.5 μ: stipe slender, glabrous, white, solid, tapering downward, 2.5–3.5 cm. long, 3–5 mm. thick.

TYPE LOCALITY: Massachusetts.
DISTRIBUTION: Maine and Massachusetts.

14. **Camarophyllus recurvatus** (Peck) Murrill.

Hygrophorus recurvatus Peck, Bull. N. Y. State Mus. 157: 28. 1912.

Pileus fleshy at the center, thin toward the margin, convex, becoming plane or concave by the margin curving upward, often lacerate on the margin, 1.2-2.4 cm. broad; surface grayish-brown when moist, subalutaceous and even when dry, glabrous, often more highly colored at the center than on the margin, which is striatulate when moist: context white; lamellae subventricose, distant, venosely connected, decurrent, whitish: spores broadly ellipsoid or subglobose, 6–8 × 4–6 μ: stipe fragile, equal, stuffed or hollow, fibrous, easily splitting, subpruinose, white or whitish, 2–4 cm. long, 2–4 mm. thick.

TYPE LOCALITY: Canandaigua, New York.
HABITAT: On lawns.
DISTRIBUTION: New York.

15. **Camarophyllus Peckianus** (Howe) Murrill.

Hygrophorus Peckianus Howe, Bull. Torrey Club 5: 43. 1874.

Pileus rather firm, fleshy, convex or slightly depressed at the center, gregarious or subcespitose, 1–2 cm. broad; surface smooth, hygrophanous, fuliginous when moist, paler or buff-brown when dry, margin decurved and sometimes wavy: context having quite a strong odor; lamellae subdistant, broad, thick, arcuate, decurrent, pallid when young, becoming darker with age: spores subglobose, rough, 5 μ in diameter: stipe smooth, stuffed or hollow, subflexuous, often compressed and attenuate at the base, concolorous, 2.5–5 cm. long, about 2 mm. thick.

TYPE LOCALITY: Lake Pleasant, New York.
HABITAT: On the ground under *Pteris aquilina*.
DISTRIBUTION: New York and Massachusetts.

16. **Camarophyllus basidiosus** (Peck) Murrill.

Clitocybe basidiosa Peck, Bull. N. Y. State Mus. 1^2: 5. 1888.
Hygrophorus basidiosus Peck, Bull. N. Y. State Mus. 116: 57. 1907.

Pileus rather thin, convex to expanded, umbilicate or centrally depressed, sometimes cespitose, 3.5–4 cm. broad; surface glabrous, hygrophanous, grayish-brown and striatulate on the margin when moist, dingy-white or grayish-white when dry: context whitish; lamellae adnate or subdecurrent, distant, incurved or nearly plane, thick, whitish with a violaceous tint: spores subglobose, 4–5 μ: stipe firm, equal or slightly thickened at the apex, glabrous, whitish or pallid, 2.5–5 cm. long, 2–4 mm. thick.

TYPE LOCALITY: Sandlake, New York.
HABITAT: Woods and swamps.
DISTRIBUTION: New York.

17. **Camarophyllus nigridius** (Peck) Murrill.

Hygrophorus nigridius Peck, Bull. Torrey Club **22**: 211. 1895.

Pileus fleshy, convex, obtuse or subumbonate, gregarious, 2.5–5 cm. broad; surface glabrous, grayish-brown or blackish-brown, darker at the center: context white; lamellae decurrent, distant, white: spores ellipsoid, 10–13 $\times$ 6–8 μ: stipe slender, solid, brownish, white at the apex, 2.5–5 cm. long, 0.5–1 cm. thick.

TYPE LOCALITY: Prince Edward's Island, Canada.
HABITAT: In pine and fir woods.
DISTRIBUTION: Known only from the type locality.

18. **Camarophyllus Burnhami** (Peck) Murrill.

Hygrophorus Burnhami Peck, Bull. N. Y. State Mus. 116: 56. 1907.

Pileus fleshy, broadly conic, becoming convex or nearly plane, gregarious, 2.5–5 cm. broad; surface moist in wet weather, glabrous or slightly and obscurely innately fibrillose on the margin, blackish-brown: context white; lamellae narrow, sometimes forked, subdistant, adnate or slightly decurrent, white: spores ellipsoid, 7.5–10 $\times$ 5–6 μ: stipe equal, sometimes pointed or abruptly narrowed at the base, fibrillose-striate, solid, whitish, becoming tinged with the color of the pileus, white within and white-tomentose at the base, 3.5–7.5 cm. long, 8–12 mm. thick.

TYPE LOCALITY: West Fort Ann, Washington County, New York.
HABITAT: In mixed woods.
DISTRIBUTION: Known only from the type locality.

19. **Camarophyllus cremicolor** Murrill.

Hydrocybe cremicolor Murrill, Mycologia **4**: 209. 1912.
Hygrophorus cremicolor Murrill, Mycologia 4: 217. 1912.

Pileus convex to expanded, umbonate, solitary, 2.5 cm. broad; surface moist, not viscid, glabrous, smooth, uniformly cream-colored: lamellae decurrent, arcuate, distant, bright-

yellowish-white: spores ovoid, pointed at one end, smooth, hyaline, 5–6 × 3.5–4 μ: stipe fleshy, subequal, smooth, glabrous, cremeous, 5 cm. long, 7 mm. thick.

TYPE LOCALITY: Seattle, Washington.
HABITAT: On the ground in woods.
DISTRIBUTION: Known only from the type locality.

20. **Camarophyllus albo-umbonatus** Murrill.

Hydrocybe albo-umbonata Murrill, Mycologia **3**: 195. 1911.
Hygrophorus albo-umbonatus Murrill, Mycologia **4**: 332. 1912.

Pileus conic, with long, cylindric umbo, solitary, 2.5 cm. broad, nearly 2 cm. high; surface smooth, glabrous, moist, white: lamellae broad, ventricose, thin, white: spores subglobose, smooth, hyaline, 5–7 μ: stipe curved, terete, equal, glabrous, moist, white, 5 cm. long, 2 mm. thick.

TYPE LOCALITY: New Haven Gap, Jamaica.
HABITAT: On the ground in woods.
DISTRIBUTION: Known only from the type locality.

DOUBTFUL SPECIES

Camarophyllus caprinus (Scop.) P. Karst. Bidr. Finl. Nat. Folk **32**: 224. 1879. (*Agaricus caprinus* Scop. Fl. Carn. ed. 2. **2**: 438. 1772. *Hygrophorus caprinus* Fries, Epicr. Myc. 326. 1838.) Reported from the eastern United States by certain mycologists, but possibly confused with dark forms of *H. hypothejus*.

Hygrophorus metapodius Fries, Epicr. Myc. 328. 1838. (*Agaricus metapodius* Fries, Obs. Myc. **2**: 110. 1818.) Described from Sweden and reported from the eastern United States by certain mycologists. Peck remarks that the American specimens are not all viscid nor does the context turn red when wounded as in typical specimens. I have seen no material that corresponds with authentic material from Europe.

Hygrophorus nitratus (Pers.) Fries, Hymen. Eur. 421. 1874. (*Agaricus nitratus* Pers. Syn. Fung. 356. 1801.) Reported from the United States by some mycologists but possibly confused with *C. auratocephalus*.

Hygrophorus Ravenelii Berk. & Curt. Ann. Mag. Nat. Hist. II. **12**: 424. 1853. Described from specimens collected in wet ground in South Carolina by Ravenel. The pileus is convex, cespitose, 4–6 cm. broad, orange-colored; lamellae emarginate, paler; stipe yellow, 10–12 cm. long. The stipe is usually long and thick, and whitish at the base, as in *Camarophyllus auratocephalus*. A sketch of the single type specimen at Kew and a mount of the spores, which are oblong-ellipsoid, smooth, hyaline, 7–8 × 5 μ, were prepared for me by Miss Wakefield.

Hygrophorus? variolosus Fries, Nova Acta Soc. Sci. Upsal. III. **1**: 29. 1851. Described from specimens collected in Costa Rica by Oersted, who made colored drawings of fresh specimens and also preserved some in alcohol. These specimens could not be found in Europe, but the drawings strongly suggest *Armillaria alphitophylla*.

39. **HYGROPHORUS** Fries, Gen. Hymen. 8. 1836.

Hygrophorus § *Limacium* Fries, Epicr. Myc. 320. 1838.
Limacium Schroet. Krypt.-Fl. Schles. **3**[1]: 330. 1887. Not *Limacia* Lour. 1790.

Fleshy, firm, putrescent, solitary or gregarious; surface viscid, not often bright-colored: lamellae waxy, adnate or decurrent: spores hyaline: stipe central, fleshy, usually solid: veil glutinous, forming an inconspicuous annulus or squamules on the stipe.

Type species, *Agaricus chrysodon* Batsch.

I. SPECIES OCCURRING IN TEMPERATE NORTH AMERICA, EXCEPT THOSE CONFINED TO THE PACIFIC COAST

Pileus entirely white, rarely tinged with yellow, not differently colored on the disk.
  Stipe neither glandular-dotted nor floccose at the apex.
    Stipe 3–8 mm. thick. — 1. *H. jozzolus*.
    Stipe 10–20 mm. thick. — 2. *H. sordidus*.

Stipe yellow-floccose at the apex.	3. *H. mugnaius.*
Stipe red-dotted at the apex, at least when dry.	4. *H. glutinosus.*
Pileus white or whitish on the margin, and some shade of yellow, red, or brown on the disk.	
Pileus pale-yellow at the center, rarely reddish-yellow.	5. *H. flavodiscus.*
Pileus reddish at the center; stipe 3–5 cm. long.	6. *H. serotinus.*
Pileus usually reddish or brown-spotted at the center; stipe 5–10 cm. long.	7. *H. Laurae.*
Pileus brownish at the center, with innate, blackish fibrils.	8. *H. virgatulus.*
Pileus covered with yellow or brown gluten; lamellae greenish-yellow when old.	9. *H. paludosus.*
Pileus and lamellae violaceous.	10. *H. subviolaceus.*
Pileus some shade of red; lamellae white.	
Pileus scarlet, 2.5–6 cm. broad.	11. *H. speciosus.*
Pileus pale-incarnate, 5–12 cm. broad.	12. *H. pudorinus.*
Pileus yellowish-olive or tawny to fuliginous; lamellae yellow at maturity.	13. *H. hypothejus.*

II. SPECIES OCCURRING ON THE PACIFIC COAST

Pileus white.	1. *H. jozzolus.*
Pileus roseous to incarnate.	14. *H. fragrans.*
Pileus pale-pinkish-brown toward the margin, darker brown at the center.	15. *H. roseibrunneus.*
Pileus yellowish-olive, ferruginous, or fulvous.	
Lamellae white or cream-colored to yellow, not changing on drying.	13. *H. hypothejus.*
Lamellae white at maturity, changing to yellowish-brown on drying.	16. *H. variicolor.*

III. SPECIES OCCURRING IN TROPICAL NORTH AMERICA

Pileus pale-fuscous when young, becoming paler except on the disk, 3–4 cm. broad.	17. *H. subpratensis.*
Pileus stramineous to isabelline with a testaceous tint, 2.5 cm. broad.	18. *H. montanus.*

1. **Hygrophorus jozzolus** (Scop.) Murrill.

Agaricus jozzolus Scop. Fl. Carn. ed. 2. **2**: 431. 1772.
Agaricus lacteus Schaeff. Fung. Bavar. **4**: Ind. 19. 1774.
Agaricus eburneus Bull. Herb. Fr. *pl. 551, f. 2;* hyponym. 1791; Pers. Syn. Fung. 364. 1801.
Hygrophorus eburneus Fries, Epicr. Myc. 321. 1838.
Clitocybe albicastanea Murrill, Mycologia **5**: 206. 1913.

Pileus fleshy, moderately thick, sometimes thin, convex to expanded, 3–8 cm. broad; surface very viscid or glutinous, completely covered with a coating of gluten, entirely white or with a yellowish tint: context having a mild and not unpleasant odor; lamellae strongly decurrent, distant, with vein-like elevations near the stipe: spores ovoid, granular, 6–10 × 5–6 μ: stipe spongy to stuffed within, sometimes hollow and tapering toward the base, 6–15 cm. long, 3–8 mm. thick.

TYPE LOCALITY: Carniola.
HABITAT: On the ground in deciduous or coniferous woods or in partially shaded places.
DISTRIBUTION: Throughout temperate North America; also in Europe.
ILLUSTRATIONS: Atk. Stud. Am. Fungi *f. 113;* Bull. Herb. Fr. *pl. 551, f. 2;* L. Dufour, Atl. Champ. *pl. 19, f. 41;* Gill. Champ. Fr. *pl. 122 (335)*; Mycologia **6**: *pl. 131;* Ricken, Blätterp. Deutschl. *pl. 6, f. 5;* Schaeff. Fung. Bavar. *pl. 39* (as *A. lacteus*).

2. **Hygrophorus sordidus** Peck, Bull. Torrey Club **25**: 322. 1898.

Pileus broadly convex to subplane, 5–10 cm. broad; surface glabrous, subviscid, white, margin strongly involute, then expanded or reflexed: context firm when young, tough when old; lamellae adnate or decurrent, subdistant, white or cream-white: spores ellipsoid, 6.5–7.5 × 4–5 μ: stipe short, firm, white, solid, 5–10 cm. long, 1–2 cm. thick: veil cobwebby in young hymenophores.

TYPE LOCALITY: Tacoma Park, District of Columbia.
HABITAT: In pine woods.
DISTRIBUTION: Southern New York to the District of Columbia and west to Ohio.
ILLUSTRATION: Hard, Mushrooms *f. 176.*

3. **Hygrophorus mugnaius** (Scop.) Murrill.

Agaricus mugnaius Scop. Fl. Carn. ed. 2. **2**: 429. 1772.
Agaricus chrysodon Batsch, Elench. Fung. Contin. **2**: 79. 1789.
Hygrophorus chrysodon Fries, Epicr. Myc. 320. 1821.

Pileus fleshy, convex-plane, 4–6 cm. broad; surface viscid, floccose, white, margin involute: lamellae distant, rather thin, becoming crisped, white: spores ellipsoid, hyaline, 8–9 × 4–5 μ:

stipe subequal, squamulose, white, stuffed, yellow-floccose at the apex, 5–6 cm. long, 1–2 cm. thick: annulus incomplete, of yellow flocci.

TYPE LOCALITY: Carniola.
HABITAT: In woods.
DISTRIBUTION: Canada to Alabama; also in Europe.
ILLUSTRATIONS: Atk. Stud. Am. Fungi *f. 112;* Batsch, Elench. Fung. *f. 212;* Gill. Champ. Fr. *pl. 330;* Ricken, Blätterp. Deutschl. *pl. 6, f. 4.*
EXSICCATI: D. Sacc. Myc. Ital. *1610.*

4. **Hygrophorus glutinosus** Peck, Bull. N. Y. State Mus. **10**: 950. 1902.

Hygrophorus rubropunctus Peck, Bull. N. Y. State Mus. 116: 49. 1907.

Pileus fleshy, firm, convex, 2.5–5 cm. broad; surface white or tinged with yellow, glutinous, margin involute: context white; lamellae adnate, subdistant, white: spores 7–10 × 4–6 μ: stipe equal, white, solid, floccose-tomentose, glutinous at the base, glandular-dotted above the annulus, the dots becoming red on drying, 2.5 cm. long, 6–8 mm. thick: annulus glutinous.

TYPE LOCALITY: Bolton, New York.
HABITAT: On the ground in partial shade.
DISTRIBUTION: New York to North Carolina.

5. **Hygrophorus flavodiscus** Frost & Peck; Peck, Ann. Rep. N. Y. State Mus. **35**: 134. 1884.

Pileus convex or plane, 2.5–7.5 cm. broad; surface smooth, glutinous, white, with a pale-yellow or reddish-yellow disk: lamellae adnate or decurrent, subdistant, white, sometimes with a slight flesh-colored tint, the interspaces sometimes veiny: spores ellipsoid, 7–7.5 × 4 μ: stipe subequal, solid, glutinous, white, sometimes slightly stained with yellow, 5–7.5 cm. long, 4–16 mm. thick.

TYPE LOCALITY: West Albany, New York.
HABITAT: In pine woods.
DISTRIBUTION: New England and New York to Ohio.
ILLUSTRATIONS: Ann. Rep. N. Y. State Mus. **51**: *pl. 51, f. 6–11;* Hard, Mushrooms *f. 167;* Mem. N. Y. State Mus. **3**: *pl. 50, f. 1–6;* Mycologia **4**: *pl. 56, f. 11.*

6. **Hygrophorus serotinus** Peck, Bull. N. Y. State Mus. 116: 32. 1907.

Pileus fleshy but thin, convex or nearly plane, often with the thin margin curved upward, gregarious or cespitose, 3–6 cm. broad; surface glabrous or with a few obscure, innate fibrils, reddish at the center, whitish on the margin: context white, the taste mild; lamellae thin, subdistant, adnate or decurrent, white, the interspaces slightly venose: spores ellipsoid, hyaline, 7.5 × 5 μ: stipe equal, stuffed or hollow, glabrous, whitish, 3–5 cm. long, 3–10 mm. thick.

TYPE LOCALITY: Near Boston, Massachusetts.
HABITAT: Oak and pine woods.
DISTRIBUTION: Massachusetts and southern New York.

7. **Hygrophorus Laurae** Morgan, Jour. Cinc. Soc. Nat. Hist. **6**: 180. 1883.

Pileus fleshy, more or less irregular, convex-umbonate to depressed, 5–10 cm. broad; surface glutinous, white, often reddish or brown-spotted on the disk: lamellae heterophyllous, adnate-decurrent, distant, white: spores ellipsoid, apiculate, pellucid, 8.5 × 5.5 μ: stipe more or less curved or inflexed, yellowish-white, solid, rough at the apex, tapering downward, 5–10 cm. long, 1 cm. thick.

TYPE LOCALITY: Miami Valley, Ohio.
HABITAT: Among leaves in woods.
DISTRIBUTION: New York to North Carolina and west to Kansas.
ILLUSTRATIONS: Bull. N. Y. State Mus. **10**: *pl. 77, f. 6–14;* 94: *pl. 88, f. 8–11;* Jour. Cinc. Soc. Nat. Hist. **6**: *pl. 9;* Mycologia **2**: *pl. 27, f. 10.*
EXSICCATI: Shear, N. Y. Fungi *302.*

8. **Hygrophorus virgatulus** Peck, Ann. Rep. N. Y. State Mus. **26**: 64. 1874.

Pileus convex or expanded, subcespitose, 2.5–5 cm. broad; surface viscid when moist, minutely virgate with innate, blackish fibrils, whitish with a brownish disk: lamellae distant, arcuate-decurrent, white: stipe equal or tapering downward, with a few small, white, floccose scales at the apex, solid, viscid, 6–10 cm. long, 4–6 mm. thick.

TYPE LOCALITY: North Greenbush, New York.
HABITAT: On the ground in open woods.
DISTRIBUTION: Known only from the type locality.

9. **Hygrophorus paludosus** Peck, Bull. Torrey Club **29**: 70. 1902.

Pileus fleshy, convex, obtuse, 2–4 cm. broad; surface whitish, covered with yellow or brown gluten: context white, the odor earthy, the taste slightly acrid; lamellae adnate or subdecurrent, subdistant, whitish, stained greenish-yellow when old: spores hyaline, 8–10 × 5–7 μ: stipe rather long, flexuous, often curved at the base, nearly equal, glutinous, white with yellow glandular dots at the apex, streaked with brown gluten when dry, solid, 5–10 cm. long, 4–8 mm. thick.

TYPE LOCALITY: Greenville, Michigan.
HABITAT: Growing among sphagnum.
DISTRIBUTION: Known only from the type locality.

10. **Hygrophorus subviolaceus** Peck, Ann. Rep. N. Y. State Mus. **53**: 842. 1900.

Pileus firm, hemispheric to convex, 2.5–4 cm. broad; surface glabrous, hygrophanous, viscid, violaceous when moist, paler or grayish when dry: context white; lamellae decurrent, distant, arcuate, pale-violaceous: spores subglobose, 6–7.5 × 5–6 μ: stipe equal or tapering downward, glabrous, white, solid, 2.5–4 cm. long, 8 mm. thick.

TYPE LOCALITY: Meadowdale, New York.
HABITAT: Damp, mucky ground in swamps.
DISTRIBUTION: Known only from the type locality.
ILLUSTRATIONS: Ann. Rep. N. Y. State Mus. **53**: *pl. C, f. 11–15*.

11. **Hygrophorus speciosus** Peck, Ann. Rep. N. Y. State Mus. **29**: 43. 1878.

Hygrophorus coloratus Peck, Bull. N. Y. State Mus. 122: 21. 1908.

Pileus at first ovate or subconic, then expanded, often with a small umbo, gregarious, 2.5–6 cm. broad; surface smooth, glutinous, bright-red or scarlet, becoming yellowish, margin thin, decurved: lamellae arcuate, adnate or decurrent, subdistant, white or yellowish, interveined: spores ellipsoid, 8–9 × 5–6 μ: stipe long, subequal, white or yellowish, sometimes viscid, 6–13 cm. long, 4–10 mm. thick: veil slight, floccose, rarely present.

TYPE LOCALITY: Greig, New York.
HABITAT: In sphagnum bogs.
DISTRIBUTION: New England, New York, and Michigan.
ILLUSTRATIONS: Ann. Rep. N. Y. State Mus. **29**: *pl. 2, f. 1–5;* Hard, Mushrooms *f. 168;* Mem. N. Y. State Mus. **3**: *pl. 51, f. 21–28*.

12. **Hygrophorus pudorinus** Fries, Epicr. Myc. 322. 1838.

Agaricus pudorinus Fries, Syst. Myc. **1**: 33. 1821.

Pileus fleshy, convex to depressed, gregarious to cespitose, 5–12 cm. broad; surface glabrous, viscid, not pelliculose, pale-incarnate, sometimes yellow-spotted: context white, the taste mild; lamellae distant, squarely adnate to slightly decurrent, thick, white: spores ellipsoid, hyaline, 8 × 4 μ: stipe scabrous above with white points, which usually become reddish on drying, solid, firm, white, 5–12 cm. long, 1–2 cm. thick.

TYPE LOCALITY: Sweden.
HABITAT: On the ground in woods.
DISTRIBUTION: New York and Michigan; also in Europe.
ILLUSTRATIONS: Bull. N. Y. State Mus. **67**: *pl. 83, f. 1–6;* Gill. Champ. Fr. *pl. 123 (347)*; Ricken, Blätterp. Deutschl. *pl. 4, f. 3*.

13. **Hygrophorus hypothejus** Fries, Epicr. Myc. 324. 1838.

Agaricus hypothejus Fries, Obs. Myc. **2**: 10. 1818.
Hygrophorus fuligineus Frost & Peck; Peck, Ann. Rep. N. Y. State Mus. **35**: 134. 1884.
Hygrophorus elegantulus Peck, Bull. Torrey Club **22**: 200. 1895.
Hygrophorus amygdalinus Peck, Bull. Torrey Club **25**: 322. 1898.
Hygrophorus Morrisii Peck, Bull. Torrey Club **26**: 64. 1899.
Hydrocybe arenicola Murrill, Mycologia **4**: 208. 1912.
Hygrophorus subpustulatus Murrill, Mycologia **4**: 210. 1912.

Pileus convex to slightly depressed, often with a small umbo, gregarious, 2.5–10 cm. broad; surface smooth, glutinous, yellowish-olive or tawny to fuliginous, usually darker on the disk, margin sometimes wavy or irregular: context white or yellowish; lamellae moderately broad, slightly decurrent, rarely adnate, rather distant, white or cream-colored to light-orange-yellow, the interspaces often veiny: spores ellipsoid, smooth, hyaline, 5–10 × 4–5 μ: stipe variable in length, equal or ventricose, sometimes attenuate at the base, stuffed, glutinous, except at the apex, white or yellowish, rarely darker below, 4–10 cm. long, 0.5–2 cm. thick: veil partial, floccose, evanescent.

TYPE LOCALITY: Sweden.
HABITAT: In pine woods.
DISTRIBUTION: Throughout temperate North America; also in Europe.
ILLUSTRATIONS: Ann. Rep. N. Y. State Mus. 49: *pl. 45, f. 8–14;* Atk. Stud. Am. Fungi *f. 114;* Boudier, Ic. Myc. *pl. 32;* Gill. Champ. Fr. *pl. 126* (*337*); Hard, Mushrooms *f. 169;* Mem. N. Y. State Mus. **3**: *pl. 50, f. 7–12.*
EXSICCATI: Ellis & Ev. Fungi Columb. *1403;* Krieger, Fungi Sax. *481;* Sydow, Myc. Mar. *615, 3104.*

14. **Hygrophorus fragrans** Murrill, Mycologia **4**: 210. 1912.

Pileus convex to depressed, not umbonate, gregarious, decidedly fragrant when dry, 8–10 cm. broad; surface smooth, glabrous, viscid, roseous to incarnate, with white margin and somewhat darker center: context rather thick and fleshy, white; lamellae adnate, distant, inserted, white: spores ellipsoid, smooth, hyaline, averaging 8 × 5 μ: stipe long, equal, solid, furfuraceous, whitish to cremeous or ochraceous, punctate with reddish-brown dots in dried specimens and turning reddish-brown where handled, reaching 10 cm. long and 2 cm. thick.

TYPE LOCALITY: Corvallis, Oregon.
HABITAT: In low coniferous woods.
DISTRIBUTION: Known only from the type locality.

15. **Hygrophorus roseibrunneus** Murrill, sp. nov.

Pileus very irregular, convex to depressed, often umbonate, solitary or gregarious, 3–7 cm. broad; surface smooth, viscid, light-pinkish-brown toward the margin, deeper brown at the center, margin entire: context white, spongy, without characteristic odor or taste; lamellae decurrent, white, not crowded: spores ellipsoid, smooth, hyaline, 6–8 × 4–5 μ: stipe fleshy, subequal, compressed, white, farinose, smooth, usually solid, 5–10 cm. long, 6–12 mm. thick.

Type collected under an oak tree at Jasper Ridge, near Stanford University, California, January 11, 1912, *James McMurphy 135* (herb. N. Y. Bot. Gard.).
HABITAT: Under oak trees.
DISTRIBUTION: Throughout most of southern California.

16. **Hygrophorus variicolor** Murrill, Mycologia **4**: 209. 1912.

Pileus rather thick and fleshy, convex to nearly plane, sometimes umbonate, solitary, 5–12 cm. broad; surface smooth, the center moist, subviscid, and glabrous, the margin dry and hispid-scaly, color varying from fulvous at the center to ferruginous-fulvous between center and margin, and stramineous on a marginal zone 1–5 cm. broad: lamellae squarely adnate, somewhat decurrent in large plants, subdistant, inserted, white, waxy, changing to reddish-brown on drying: spores ovoid, smooth, hyaline, 6–8 × 4–4.5 μ: stipe fleshy, subequal, white, pulverulent, 4 cm. long, nearly 1 cm. thick: veil represented by a few short, brownish fibrils at the middle of the stipe.

TYPE LOCALITY: Mill City, Oregon.
HABITAT: On the ground in low woods.
DISTRIBUTION: Oregon and Washington.

17. **Hygrophorus subpratensis** Murrill, Mycologia **3**: 199. 1911.

Pileus convex, obtuse, gregarious, 3–4 cm. broad; surface pale-fuscous when young, becoming pallid or whitish with darker disk, slimy-viscid, not striate, the pellicle separable: context white, unchanging, the odor and taste mild; lamellae deeply sinuate, broad, crowded, white: spores globose or subglobose, smooth, hyaline, 5 μ: stipe cylindric, equal, slimy-viscid, white, solid but spongy, 3–4 cm. long, 3–4 mm. thick: veil slimy-viscid, scarcely leaving an annulus.

TYPE LOCALITY: Santiago de las Vegas, Cuba.
HABITAT: On lawns and on banana trash.
DISTRIBUTION: Santiago de las Vegas, Cuba.

18. **Hygrophorus montanus** Murrill, Mycologia **3**: 199. 1911.

Pileus plane or convex, smooth, depressed, gregarious, 2.5 cm. broad; surface smooth, viscid, stramineous to isabelline, with a testaceous tint, margin incurved, white, entire: lamellae adnexed, rather broad, yellowish-white, discolored in blotches on drying, pruinose on the edges: spores pip-shaped, smooth, faintly yellowish, 8–10 × 4–5 μ: stipe shining, watery-white, smooth, cylindric, equal, fleshy-fibrous, 4 cm. long, 5 mm. thick: veil very slight, not forming an annulus.

TYPE LOCALITY: New Haven Gap, Jamaica.
HABITAT: On the ground in a trail.
DISTRIBUTION: Known only from the type locality.

DOUBTFUL SPECIES

Hygrophorus caerulescens Berk. & Curt. Ann. Mag. Nat. Hist. III. **4**: 292. 1859. Described from specimens collected by Sprague among dead leaves and sticks in woods in New England. Like all Sprague's collections at Kew, this is accompanied by excellent notes and a beautiful sketch, which is very similar to *Camarophyllus fulvosus* in shape. The pileus is described as "delicate blue-drab," the lamellae as "much decurrent, of a deeper colour than the pileus," and the stipe as "white with a light blue tint."

Hygrophorus capreolarius (Kalchbr.) Fries, Hymen. Eur. 407. 1874. (*Hygrophorus erubescens capreolarius* Kalchbr. Ic. Hymen. Hung. 35. 1874.) Reported from North Elba, New York, by Peck, but I find no specimens at Albany that correspond with European material.

Hygrophorus cossus (Sow.) Fries, Epicr. Myc. 321. 1838. (*Agaricus cossus* Sow. Engl. Fungi *pl. 121.* 1798.) Reported from New York by Peck but later omitted from his list because the determination of specimens was doubtful. The species is very similar to *H. jozzolus*, but has a strong odor.

Hygrophorus erubescens Fries, Epicr. Myc. 322. 1838. Reported from several of the eastern states by the older mycologists and more recently from New Jersey by Ellis and New York by Peck. Specimens so named at Albany are quite different from authentic European specimens, having a shorter stipe, more crowded lamellae, and much paler colors.

Hygrophorus fuscoalbus (Lasch) Fries, Epicr. Myc. 324. 1838. Reported by Peck as rare in northern New York, occurring under spruce and balsam fir trees.

Hygrophorus lactus Johnson, Bull. Minn. Acad. Sci. **1**: 336. 1878. Described from specimens collected among dead poplar leaves in Minnesota. The pileus is grayish-white covered with milk-white gluten.

Hygrophorus limacinus (Scop.) Fries, Epicr. Myc. 324. 1838. (*Agaricus limacinus* Scop. Fl. Carn. ed. 2. **2**: 422. 1772.) Reported once from New York by Peck, who may have confused it with *H. hypothejus*.

Hygrophorus livido-albus Fries, Epicr. Myc. 324. 1838. Reported by Peck as occurring rarely in New York.

Hygrophorus penarius Fries, Epicr. Myc. 321. 1838. This beautiful white species was omitted by Peck in his later studies because he was doubtful about the determination of the specimens. It is possible that *H. sordidus* or its relatives may account for American material referred to this species.

Hygrophorus purpurascens (Alb. & Schw.) Fries, Epicr. Myc. 322. 1838. (*Agaricus purpurascens* Alb. & Schw. Consp. Fung. 182. 1805.) Reported from New York by Peck, who says that the American plant is quite different from the European.

Hygrophorus Queletii Bres. Fungi Trid. **1**: 11. 1881. Reported from New York by Peck in 1889, but the specimens so determined were later referred to *H. pudorinus*.

Hygrophorus tephroleucus Fries, Epicr. Myc. 328. 1838. Reported from some of the eastern states by the older mycologists, who probably confused it with forms of *H. hypothejus*.

40. **CLITOCYBE** (Fries) Quél. Champ. Jura Vosg. 48. 1872.

Omphalius Roussel, Fl. Calvados ed. 2. 66. 1806. Not *Omphalea* L. 1759.
Agaricus § *Clitocybe* Fries, Syst. Myc. **1**: 78. 1821.

Pileus fleshy, putrescent, mostly glabrous and not viscid, usually solitary or gregarious, cespitose but not wood-loving in a few species: lamellae decurrent, often adnate or varying to adnate: spores hyaline, usually smooth: stipe central, fleshy: veil none.

Type species, *Clitocybe nebularis* (Batsch) Quél.

I. SPECIES OCCURRING IN TEMPERATE NORTH AMERICA, EXCEPT THOSE CONFINED TO THE PACIFIC COAST

Pileus white or whitish, sometimes differently colored on the disk.
  Pileus usually 3–5 cm. broad, rarely reaching 7 cm.
    Stipe 2.5–5 cm. long.
      Hymenophore entirely white throughout, unvarying and unchanging.
        Species growing in grassy places.
          Hymenophore gregarious. — 1. *C. dealbata.*
          Hymenophore cespitose. — 2. *C. Whetstoneae.*
        Species growing on decayed wood.
          Stipe glabrous. — 3. *C. truncicola.*
          Stipe strigose below, often eccentric. — 4. *C. eccentrica.*
        Species growing among leaves in woods.
          Pileus 1–3.5 cm. broad.
            Stipe 2 mm. thick. — 5. *C. candens.*
            Stipe 3–6 mm. thick. — 6. *C. regularis.*
          Pileus 4–7 cm. broad. — 7. *C. pithyophila.*
      Hymenophore whitish, partly tinged with some other color or varying to yellowish.
        Species growing in grassy places. — 8. *C. aperta.*
        Species growing on decayed wood.
          Spores globose. — 9. *C. leptoloma.*
          Spores ovoid. — 10. *C. Robinsoniae.*
        Species growing on the ground in woods.
          Stipe brown when moist, paler when dry. — 11. *C. fuscipes.*
          Stipe white or whitish.
            Context with farinaceous odor.
              Surface whitish, tinged with brown, at least on the disk. — 12. *C. albidula.*
              Surface very pale avellaneous. — 13. *C. farinacea.*
            Context without farinaceous odor.
              Stipe 2–4 mm. thick. — 14. *C. phyllophiloides.*
              Stipe 4–8 mm. thick. — 15. *C. subcyathiformis.*
    Stipe reaching 7 cm. long.
      Stipe 2–5 mm. thick.
        Pileus plane or obtuse. — 16. *C. connexa.*
        Pileus umbilicate or infundibuliform. — 17. *C. adirondackensis.*
      Stipe 5–12 mm. thick.
        Lamellae white, unchanging. — 18. *C. catina.*
        Lamellae white, becoming yellowish-ochraceous. — 19. *C. phyllophila.*
        Lamellae whitish, becoming blackish on drying. — 20. *C. subnigricans.*
      Stipe 20 mm. thick. — 21. *C. tenebricosa.*
  Pileus about 10 cm. broad.
    Stipe 2.5–7 cm. long.
      Stipe 1.5 cm. or less thick. — 22. *C. subconnexa.*
      Stipe 1.5–2.5 cm. thick. — 23. *C. robusta.*
    Stipe 7–10 cm. long. — 24. *C. Overholtsii.*
    Stipe 10–15 cm. long. — 25. *C. submarmorea.*
Pileus yellow, yellowish, or isabelline.
  Hymenophore solitary or gregarious.
    Pileus 7 mm. broad. — 26. *C. parvula.*
    Pileus 1–2.5 cm. broad.

Context with bitter taste.	27. *C. fellea.*
Context without bitter taste.	
Stipe equal.	28. *C. flavidella.*
Stipe subbulbous.	29. *C. subbulbipes.*
Pileus 2.5–7 cm. broad.	
Surface glabrous.	30. *C. pulcherrima.*
Surface hairy-tomentose.	31. *C. subhirta.*
Pileus 7–12 cm. broad.	32. *C. nobilis.*
Hymenophore densely cespitose.	
Pileus 7 cm. or less broad.	
Spores ellipsoid; pileus thin.	33. *C. multiformis.*
Spores globose; pileus thick.	34. *C. multiceps.*
Pileus 12 cm. broad.	35. *C. elephantina.*
Pileus brownish when moist, becoming whitish or yellowish on drying.	
Pileus 4–10 mm. broad.	36. *C. peltigerina.*
Pileus 1–2.5 cm. broad.	37. *C. subditopoda.*
Pileus 2.5–5 cm. broad.	
Pileus squamulose.	38. *C. subsquamata.*
Pileus glabrous.	
Stipe 4–8 mm. thick; lamellae becoming cinereous.	39. *C. dicolor.*
Stipe 2–4 mm. thick; lamellae not becoming cinereous.	40. *C. hiemalis.*
Pileus green or greenish, fading with age or on drying.	41. *C. virens.*
Pileus some shade of red or reddish-brown.	
Pileus pale-rosy-isabelline, often pale-bay on the disk; stipe 1–2 cm. thick.	42. *C. subclavipes.*
Pileus reddish-flesh-colored; lamellae reddish.	43. *C. trullisata.*
Pileus ochraceous-red; lamellae becoming yellowish.	44. *C. sinopica.*
Pileus brick-colored to tan-colored; lamellae becoming reddish.	45. *C. inversa.*
Pileus brownish or reddish-brown; lamellae pallid or subcinereous.	46. *C. subconcava.*
Pileus reddish, brownish, or pale-tan-colored; lamellae white, unchanging.	
Pileus 2–3 cm. broad.	
Species growing in grassy places.	47. *C. compressipes.*
Species growing under pine trees.	48. *C. pinophila.*
Pileus 4–7 cm. broad.	49. *C. infundibuliformis.*
Pileus some shade of gray, grayish-brown, or blackish-brown.	
Pileus 2–5 cm. broad.	
Pileus gray or light-brown.	
Species growing in grassy places.	50. *C. vilescens.*
Species growing in humus in woods.	51. *C. lactariiformis.*
Pileus dark-brown.	52. *C. concava.*
Pileus 5–10 cm. or more broad.	
Stipe short, rarely reaching 7 cm.	
Stipe white.	53. *C. fumosa.*
Stipe brown or blackish.	
Stipe equal.	54. *C. media.*
Stipe much thickened at the base.	55. *C. clavipes.*
Stipe long, 10–15 cm.	
Pileus avellaneous.	56. *C. coloradensis.*
Pileus dark-brown.	57. *C. Earlei.*

II. SPECIES OCCURRING ON THE PACIFIC COAST

Pileus white, whitish, or slightly yellowish.	
Pileus 0.5–1.5 cm. broad.	58. *C. pusilla.*
Pileus 2–4 cm. broad, sometimes larger in *C. microspora.*	
Species growing in grassy places.	1. *C. dealbata.*
Species growing in the woods.	
Pileus umbonate, the umbo avellaneous.	59. *C. subfumosipes.*
Pileus not umbonate, depressed at the center.	
Stipe 2–4 cm. long.	
Spores globose.	60. *C. microspora.*
Spores ellipsoid.	5. *C. candens.*
Stipe 4–6 cm. long.	61. *C. subdicolor.*
Pileus 5–10 cm. broad.	
Stipe 3–6 cm. long.	
Lamellae distant; stipe equal.	62. *C. washingtonensis.*
Lamellae more or less crowded; stipe thickened at the base.	63. *C. variabilis.*
Stipe 10–15 cm. long.	
Pileus gregarious; stipe 15 cm. or more long.	64. *C. stipitata.*
Pileus cespitose; stipe 9–16 cm. long.	65. *C. albiformis.*
Pileus stramineous.	
Pileus convex to plane.	66. *C. subcandicans.*
Pileus umbilicate to depressed.	67. *C. Peckii.*
Pileus isabelline.	
Pileus umbilicate to infundibuliform.	68. *C. oregonensis.*
Pileus convex to plane, sometimes slightly depressed.	
Lamellae white, not changing.	69. *C. rugosipes.*
Lamellae rosy-isabelline, becoming darker.	70. *C. vialis.*

Pileus dull-rosy-isabelline with a fulvous tint; lamellae and stipe concolorous. — 71. *C. cuticolor.*
Pileus some shade of fulvous or latericeous.
  Pileus 2–5 cm. broad.
    Pileus gibbous, subfulvous. — 72. *C. hondensis.*
    Pileus slightly depressed, very light brown when moist, fulvous when dry. — 73. *C. subinversa.*
    Pileus usually umbilicate, ochraceous-red. — 44. *C. sinopica.*
  Pileus 5–8 cm. broad, infundibuliform. — 45. *C. inversa.*
Pileus some shade of gray, brown, or black, rarely with a violet tint.
  Lamellae white or yellowish, unchanging.
    Pileus becoming infundibuliform, 10 cm. or more broad. — 74. *C. avellaneialba.*
    Pileus not becoming infundibuliform.
      Pileus reaching 4.5 cm. broad, avellaneous with fuliginous center. — 75. *C. oculata.*
      Pileus 5–10 cm. broad.
        Stipe 4–6 cm. long. — 55. *C. clavipes.*
        Stipe 10–15 cm. long. — 76. *C. oreades.*
  Lamellae gray, violet, murinous, or blackish, or becoming so with age or on drying.
    Pileus 2–3 cm. broad.
      Pileus grayish-violet, tinged with brown on the disk; lamellae pale-violet. — 77. *C. violaceifolia.*
      Pileus smoky-brown; lamellae murinous. — 78. *C. murinifolia.*
    Pileus 2–6 cm. broad.
      Pileus fuliginous; lamellae white to grayish-discolored. — 79. *C. atrialba.*
      Pileus dull-avellaneous; lamellae concolorous, becoming fuliginous. — 80. *C. brunnescens.*
    Pileus 8–10 cm. broad.
      Pileus solitary, grayish-white or avellaneous. — 81. *C. griseifolia.*
      Pileus subcespitose, cinereous to pale-murinous. — 82. *C. Harperi.*

III. SPECIES OCCURRING IN TROPICAL NORTH AMERICA

Pileus snow-white, 7 mm. broad. — 83. *C. niveicolor.*
Pileus whitish or pale-isabelline.
  Pileus 1 cm. broad. — 84. *C. trojana.*
  Pileus 5–8 cm. broad.
    Stipe 2–4 mm. thick. — 85. *C. Broadwayi.*
    Stipe 2 cm. thick. — 86. *C. mexicana.*
Pileus pallid with a rosy tint, light-bay on the conic umbo, 2 cm. broad. — 87. *C. incrustata.*
Pileus dilute-testaceous, deeply umbilicate, 3–5 cm. broad. — 88. *C. testaceoflava.*

1. **Clitocybe dealbata** (Sow.) Gill. Champ. Fr. 152. 1874.

Agaricus dealbatus Sow. Engl. Fungi *pl. 123.* 1798.

Pileus slightly fleshy, convex becoming plane, gregarious; 2.5–4 cm. broad; surface dry, smooth, glabrous, subshining, white, margin sometimes upturned or wavy: context white, the taste mild; lamellae crowded, thin, adnate, white: spores ellipsoid, 4.5 × 2–2.5 μ: stipe fibrous, equal, stuffed, pruinose or mealy at the apex, white, 2–3 cm. long, 2–3 mm. thick.

TYPE LOCALITY: England.
HABITAT: Grassy places.
DISTRIBUTION: Temperate North America; also in Europe.
ILLUSTRATIONS: Cooke, Brit. Fungi *pl. 104 (142)*; Hussey, Ill. Brit. Myc. 2: *pl. 36;* Sow. Engl. Fungi *pl. 123.*

2. **Clitocybe Whetstoneae** Murrill, sp. nov.

Pileus convex to plane or slightly depressed, cespitose, 5 cm. broad; surface dry, smooth, glabrous, white, not striate, margin entire, concolorous, inflexed on drying: context whitish, the taste sweet and the odor pleasant; lamellae decurrent, rather narrow, exceedingly crowded, white: spores ellipsoid, smooth, hyaline, about 5 × 3 μ: stipe tapering upward, smooth, glabrous, white, hollow, 5 cm. long, 7 mm thick.

Type collected in grass at Minneapolis, Minnesota, *Mary S. Whetstone* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

3. **Clitocybe truncicola** (Peck) Sacc. Syll. Fung. 5: 184. 1887.

Agaricus (Clitocybe) truncicola Peck, Bull. Buffalo Soc. Nat. Sci. 1: 46. 1873.

Pileus thin, firm, expanded or slightly depressed at the center, 1.5–3.5 cm. broad; surface glabrous, dry, white: lamellae crowded, thin, narrow, adnate or slightly decurrent, white:

spores broadly ellipsoid or subglobose, 4.5 × 3–4 μ: stipe slender, equal, stuffed or hollow, glabrous, whitish, often curved and eccentric from the place of growth, 2.5 cm. long, 2 mm. thick.

TYPE LOCALITY: Croghan, New York.
HABITAT: Trunks of deciduous trees, especially sugar maple.
DISTRIBUTION: New York and Ohio.

4. **Clitocybe eccentrica** Peck, Bull. Torrey Club **25**: 321. 1898.

Pileus very thin, umbilicate or subinfundibuliform, gregarious or cespitose, 2.5–5 cm. broad; surface glabrous, watery-white and shining when moist, white when dry, margin thin, often lobed, irregular or deeply cleft on one side: lamellae narrow, close, decurrent, white: spores 4–5 × 2.5–3 μ: stipe slender, often eccentric, white, tough, solid, glabrous, strigosely hairy at the base, often with long branching strands of white mycelium permeating the matrix, 2.5–4 cm. long, 2–4 mm. thick.

TYPE LOCALITY: Vermont.
HABITAT: Much decayed wood.
DISTRIBUTION: New England to North Carolina and west to Wisconsin.

5. **Clitocybe candens** Murrill.

Agaricus umbilicatus Bolt. Hist. Fung. 17. 1788. Not *A. umbilicatus* Schaeff. 1774.
Agaricus candicans Pers. Syn. Fung. 456. 1801. Not *A. candicans* Schaeff. 1774.
Clitocybe albo-umbilicata Murrill, Mycologia **7**: 257, in part. 1915. Not *Agaricus albo-umbilicatus* Hoffm. Nom. Fung. 152. 1789.

Pileus slightly fleshy, convex becoming plane or depressed, umbilicate, regular, gregarious, 2–3 cm. broad; surface smooth, shining, with a superficial silky film, white when moist, shining-white when dry: context somewhat tough; lamellae very thin, crowded, narrow, adnate becoming decurrent, white: spores 4–6 × 4 μ: stipe smooth, equal, waxy, polished, rarely slightly eccentric, hollow or nearly so, shining, often curved, rooting and villose at the base, 2–4 cm. long, 2–5 mm. thick.

TYPE LOCALITY: Europe.
HABITAT: Among fallen leaves in woods.
DISTRIBUTION: Eastern United States; California; also in Europe.

6. **Clitocybe regularis** Peck, Bull. N. Y. State Mus. **10**: 948. 1902.

Pileus thin, flexible, broadly convex, becoming nearly plane, often depressed at the center, orbicular, regular, 1–2.5 cm. broad; surface whitish when moist, white when dry: context white, the taste mild; lamellae thin, narrow, crowded, decurrent, whitish: spores minute, 4–5 × 2.5–3 μ: stipe firm, equal, glabrous, solid or rarely hollow, whitish, spongy and thickened at the base, 2.5 cm. long, 3–6 mm. thick.

TYPE LOCALITY: Bolton, New York.
HABITAT: Among leaves in woods.
DISTRIBUTION: New York and Texas.
ILLUSTRATIONS: Bull. N. Y. State Mus. **10**: *pl. K, f. 1–7.*

7. **Clitocybe pithyophila** (Fries) Gill. Champ. Fr. 152. 1874.

Agaricus (Clitocybe) pithyophilus Fries, Syst. Myc. **1**: 83. 1821.

Pileus fleshy, thin, nearly plane, umbilicate, gregarious or subcespitose, 4–7 cm. broad; surface glabrous, white when moist, shining-white when dry, margin o ten wavy or lobed: lamellae crowded, plane, narrow. adnate or slightly decurrent, persistently white: spores 6–7 × 3–4 μ: stipe equal, glabrous, downy at the base, somewhat hollow, often compressed, white or yellowish, 4–5 cm. long, 3–4 mm. thick.

TYPE LOCALITY: Europe.
HABITAT: Pine woods.
DISTRIBUTION: New York to Ohio; also in Europe.
ILLUSTRATION: Hard, Mushrooms *f. 73*

8. **Clitocybe aperta** (Peck) Sacc. Syll. Fung. **5**: 164. 1887.

Agaricus (*Clitocybe*) *apertus* Peck, Ann. Rep. N. Y. State Mus. 30: 38. 1878.

Pileus convex, becoming plane or centrally depressed, often irregular, gregarious or cespitose, 2.5 cm. broad; surface whitish, sometimes tinged with lilac and marked with one or two darker zones: context with farinaceous odor and disagreeable taste; lamellae crowded, narrow, adnate or slightly decurrent, whitish, often with a faint pinkish tint: spores 4–6 × 2–3 μ: stipe short, equal or attenuate downward, solid, whitish, 2.5–5 cm. long, 2 mm. thick.

TYPE LOCALITY: Maryland, Otsego County, New York.
HABITAT: Grassy ground by roadsides and in pastures.
DISTRIBUTION: New York.

9. **Clitocybe leptoloma** Peck, Bull. N. Y. State Mus. 157: 68. 1912.

Agaricus (*Clitocybe*) *leptolomus* Peck, Ann. Rep. N. Y. State Mus. **32**: 26. 1880.

Pileus thin, umbilicate, gregarious or cespitose, 3–5 cm. broad; surface glabrous, hygrophanous, creamy-white when moist, white when dry, very thin on the margin: lamellae thin, narrow, crowded, some of them forked, decurrent, white: spores minute, globose or subglobose, 3–4 μ: stipe equal, glabrous, generally curved or flexuous, stuffed, concolorous, with a white villosity at the base, 3–5 cm. long, 2–4 mm. thick.

TYPE LOCALITY: Indian Lake, Adirondack Mountains, New York.
HABITAT: Prostrate trunks of trees.
DISTRIBUTION: Adirondack Mountains, New York.

10. **Clitocybe Robinsoniae** Murrill, sp. nov.

Pileus broadly depressed at maturity, thin, solitary, 3 cm. broad; surface smooth, glabrous, creamy-white, shining, margin entire, concolorous, sharply inflexed on drying: context thin, white, the taste nutty and pleasant; lamellae adnate or short-decurrent, narrow, much crowded, inserted, white: spores ovoid, smooth, hyaline, 5–7 × 2–3.5 μ: stipe slightly tapering upward, smooth, glabrous, white, shining, longitudinally grooved, 2.5 cm. long, 3 mm. thick.

Type collected on rotten wood under spruce at Yellowstone Lake, Wyoming, 2,300 m., August 9, 1912, *Winifred J. Robinson 36* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

11. **Clitocybe fuscipes** Peck, Ann. Rep. N. Y. State Mus. **44**: 129 (17). 1891.

Pileus thin, broadly convex or plane, umbilicate, 8–16 mm. broad; surface glabrous, whitish and striatulate when moist, pure-white when dry: context with a farinaceous odor and taste; lamellae nearly plane, subdistant, adnate or slightly decurrent, white: spores globose, 5–6 μ: stipe equal, hollow, glabrous or slightly mealy at the apex, brown when moist, paler when dry, 2.5 cm. long, about 2 mm. thick.

TYPE LOCALITY: Carrollton, New York.
HABITAT: Under pine trees.
DISTRIBUTION: Known only from the type locality.

12. **Clitocybe albidula** Peck, Ann. Rep. N. Y. State Mus. **46**: 103 (23). 1893.

Clitocybe centralis Peck, Ann. Rep. N. Y. State Mus. **53**: 841. 1900.

Pileus convex or nearly plane, becoming umbilicate or centrally depressed, gregarious, 1–3 cm. broad; surface glabrous, whitish tinged with brown wholly or at the center only, whitish when dry; margin faintly striatulate when moist: context whitish, the odor and taste farinaceous; lamellae thin, crowded, adnate or slightly decurrent, whitish: spores minute, ellipsoid, 5–6 × 2.5–3 μ: stipe short, equal, glabrous or slightly pruinose, stuffed or hollow, concolorous, 2–4 cm. long, 2–4 mm. thick.

TYPE LOCALITY: Delmar, New York.
HABITAT: In pine or mixed woods.
DISTRIBUTION: Northern New York.
ILLUSTRATIONS: Ann. Rep. N. Y. State Mus. **53**: *pl. C, f. 16–20.*

13. **Clitocybe farinacea** Murrill, sp. nov.

Pileus convex, umbilicate, rather thin, gregarious, 2–3.5 cm. broad; surface smooth, glabrous, hygrophanous, very pale avellaneous, margin entire or undulate, concolorous, becoming inflexed and often crenate on drying: context thin, whitish, strongly farinaceous both in odor and taste; lamellae short-decurrent, determinate, arcuate, of medium distance when fresh but rather distant when dry: spores ovoid, smooth, hyaline, 6–8 × 3–5 μ: stipe equal, fleshy but more or less flexible, with a rather tough rind, pallid, smooth, pulverulent at the apex, nearly solid, 3–4 cm. long, 2–4 mm. thick.

Type collected on rich soil in deciduous woods near the New York Botanical Garden, September 10, 1911, *W. A. Murrill* (herb. N. Y. Bot. Gard.).
HABITAT: In rich soil, rarely in humus, in deciduous woods.
DISTRIBUTION: Southern New York and New Jersey.

14. **Clitocybe phyllophiloides** Peck, Bull. N. Y. State Mus. 167: 19. 1913.

Pileus thin, broadly convex or nearly plane, soon centrally depressed or subumbilicate, solitary, 2.5–6.5 cm. broad; surface glabrous, pure-white or sometimes with a slight yellowish tint at the center: context white, the taste mildly farinaceous, the odor none; lamellae thin, narrow, close, adnate or subdecurrent, white becoming pallid with age: spores 4–5 × 2–4 μ: stipe short, equal, solid, white with a white mass of tomentum at the base, 2.5–4 cm. long, 2–4 mm. thick.

TYPE LOCALITY: Constableville, New York.
HABITAT: Among fallen leaves in spruce woods.
DISTRIBUTION: Known only from the type locality.

15. **Clitocybe subcyathiformis** Peck, Bull. N. Y. State Mus. 122: 136. 1908.

Pileus fleshy but thin, broadly convex or nearly plane, becoming centrally depressed, gregarious, 2.5–5 cm. broad; surface glabrous, watery-white and often obscurely striatulate on the thin, soon spreading margin when moist, white when dry, sometimes slightly colored at the center: context white, the taste mild; lamellae thin, narrow, rather crowded, adnate or slightly decurrent, white or whitish: spores ellipsoid, 6–8 × 4–5 μ: stipe equal or slightly tapering upward, stuffed or hollow, fibrillose-reticulate, whitish, often with a whitish mycelioid tomentum at the base, 2.5–4.5 cm. long, 4–8 mm. thick.

TYPE LOCALITY: Albany County, New York.
HABITAT: Among fallen leaves under alders and birches.
DISTRIBUTION: New York.
ILLUSTRATIONS: Bull. N. Y. State Mus. 122: *pl. 110, f. 1–6*.

16. **Clitocybe connexa** (Peck) Sacc. Syll. Fung. 5: 197. 1887.

Agaricus (*Clitocybe*) *connexus* Peck, Bull. Buffalo Soc. Nat. Sci. 1: 45. 1873.

Pileus fleshy, convex becoming nearly plane, obtuse, 5–7 cm. broad; surface glabrous or minutely silky, white or grayish-white, opaque, margin thin: context with a fragrant, spicy odor; lamellae crowded, adnate or slightly decurrent, white or whitish, 2–3 mm. broad: spores ellipsoid, 6–8 × 4–5 μ: stipe equal or nearly so, firm, solid, whitish, downy or villose at the base, 2.5–7 cm. long, 3–5 mm. thick.

TYPE LOCALITY: Croghan, New York.
HABITAT: Woods.
DISTRIBUTION: New England to Wisconsin.

17. **Clitocybe adirondackensis** (Peck) Sacc. Syll. Fung. 5: 180. 1887.

Agaricus adirondackensis Peck, Ann. Rep. N. Y. State Cab. **23**: 77. 1872.

Pileus thin, convex or nearly plane and umbilicate, or soon very concave and infundibuliform, scattered or gregarious, 2.5–5 cm. broad; surface glabrous, moist in wet weather, white or pale-tan-colored, sometimes slightly tinged with brown at the center: context white, edible;

lamellae thin, crowded, narrow, very decurrent, white: spores subglobose or broadly ellipsoid, 4–5 × 3–4 μ: stipe equal or nearly so, glabrous, stuffed or hollow, concolorous, 4–7 cm. long, 2–4 mm. thick.

TYPE LOCALITY: Adirondack Mountains, New York.
HABITAT: Woods in hilly or mountainous districts.
DISTRIBUTION: New York.
ILLUSTRATIONS: Ann. Rep. N. Y. State Mus. **54**: *pl. 69, f. 1–13.*

18. **Clitocybe catina** (Fries) Quél. Champ. Jura Vosg. 215. 1872.

Agaricus catinus Fries, Epicr. Myc. 72. 1838.

Pileus fleshy but thin toward the margin, plane becoming infundibuliform, flaccid, 4–5 cm. broad; surface dry, glabrous, white becoming tinged with pink or tan-color in rainy weather: context white, the odor agreeable; lamellae rather crowded, decurrent, white: spores ellipsoid, 6–8 × 4–5 μ: stipe stuffed or solid, spongy within, elastic, slightly thickened at the base, white, 4–7 cm. long, 6–9 mm. thick.

TYPE LOCALITY: Europe.
HABITAT: In or near woods.
DISTRIBUTION: New York; also in Europe.
ILLUSTRATION: Fries, Ic. Hymen. *pl. 51, f. 4.*

19. **Clitocybe phyllophila** (Pers.) Quél. Champ. Jura Vosg. 49. 1872.

Agaricus phyllophilus Pers. Syn. Fung. 457. 1801.

Pileus fleshy, convex or plane, becoming depressed or umbilicate, obtuse, solitary or cespitose, 4–7 cm. broad; surface smooth, dry, white, silvery on the margin because of the silky veil: lamellae moderately broad, subdistant, adnate or slightly decurrent, white, becoming yellowish-ochraceous: spores ellipsoid, 6–8 × 3–5 μ: stipe equal, stuffed or hollow, tough, downy and incurved at the base, spongy within, white, sometimes eccentric, 5–7 cm. long, 5–8 mm. thick.

TYPE LOCALITY: Europe.
HABITAT: Among sticks and leaves in woods.
DISTRIBUTION: New England to North Carolina and west to Wisconsin; also in Europe.

20. **Clitocybe subnigricans** Peck, Bull. N. Y. State Mus. 150: 51. 1911.

Pileus fleshy at the center, thin toward the margin, convex becoming nearly plane, subcespitose or gregarious, 2.5–5 cm. broad; surface glabrous, whitish or smoky-white: context whitish, slowly changing to grayish on exposure to the air, the taste slightly and tardily acrid, the odor earthy, pungent, and disagreeable, very persistent; lamellae thin, narrow, crowded, slightly or in some specimens very much decurrent, rarely slightly sinuate, whitish, becoming blackish where bruised and on drying: spores hyaline, 7–9 × 4–6 μ: stipe solid, slightly fibrous-striate, somewhat thickened or distinctly bulbous at the base, colored like the pileus but becoming blackish on drying, 4–7.5 cm. long, 6–12 mm. thick.

TYPE LOCALITY: Rye Beach, New Hampshire.
HABITAT: On the ground in woods.
DISTRIBUTION: New Hampshire and northern New York.

21. **Clitocybe tenebricosa** Murrill, Mycologia **7**: 275. 1915.

Pileus convex, becoming depressed at the center with the margin upturned, gregarious, reaching 6 cm. broad; surface smooth, white, glabrous: context white, rather thin, without characteristic odor; lamellae crowded, somewhat ventricose, short-decurrent, inserted, white: spores globose, smooth, hyaline, 4–6 μ: stipe subfusiform, hollow, smooth, white, glabrous, reaching 12 cm. long and 2 cm. thick.

TYPE LOCALITY: New York Botanical Garden.
HABITAT: Side of trench beneath building, in total darkness.
DISTRIBUTION: Known only from the type locality.
ILLUSTRATION: Mycologia **7**: *pl. 165.*

22. **Clitocybe subconnexa** Murrill, Mycologia **7**: 272. 1915.

Pileus convex to expanded, rather thin, very tender and fragile, somewhat cespitose, reaching 9 cm. broad; surface smooth, dry, glabrous, milk-white; margin very thin, concolorous, entire, strongly incurved on drying: context thin, white, fragile, with pleasant odor and taste; lamellae short-decurrent or adnate, narrow, white, exceedingly crowded, several times inserted: spores ellipsoid, smooth, hyaline, 5 × 3.5 μ: stipe fleshy, subequal, smooth, glabrous, white, hollow, 5–7 cm. long, reaching 1.5 cm. thick.

TYPE LOCALITY: New York Botanical Garden.
HABITAT: In rich soil under deciduous trees.
DISTRIBUTION: New York Botanical Garden.

23. **Clitocybe robusta** Peck, Ann. Rep. N. Y. State Mus. **49**: 17. 1897.

Pileus thick, firm. convex becoming plane or slightly depressed at the center, solitary, gregarious, or cespitose, 7–10 cm. broad; surface glabrous, white or slightly clouded at the center, margin involute or decurved, naked: context white; lamellae crowded, narrow, adnate or decurrent, whitish: spores ellipsoid, yellowish, 6–8 × 4–5 μ: stipe stout, solid or hollow, glabrous, equal or tapering upward, white, 2.5–7 cm. long, 1.5–2.5 cm. thick.

TYPE LOCALITY: Catskill Mountains, New York.
HABITAT: Among fallen leaves in woods.
DISTRIBUTION: New York to Maryland and west to Wisconsin.

24. **Clitocybe Overholtsii** Murrill, sp. nov.

Pileus convex to expanded, gregarious, 6–15 cm. broad; surface dry, smooth, glabrous or rarely with a bloom, white, becoming grayish with age, margin thin, entire or undulate, white: context white, the odor and taste disagreeable; lamellae adnate or slightly decurrent, narrow, very much crowded, white or yellowish: spores ellipsoid, smooth, hyaline, 5–6 × 3–3.5 μ: stipe smooth, glabrous, white, solid or rarely hollow, enlarged and whitish-mycelioid at the base, 7–10 cm. long, 1–2 cm. thick.

Type collected on the ground in a coniferous forest at Tolland, Colorado, 2,700 m. elevation, August 5, 1914, *L. O. Overholts 2114* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Colorado, at high elevations.

25. **Clitocybe submarmorea** Murrill, Mycologia **7**: 273. 1915.

Agaricus (*Clitocybe*) *marmoreus* Peck, Ann. Rep. N. Y. State Mus. **24**: 61. 1872. Not *A. marmoreus* Lam.

Pileus fleshy, firm, broadly convex, cespitose, 5–10 cm. broad; surface glabrous, white, mottled with darker watery spots: context white; lamellae crowded, narrow, arcuate, unequally decurrent, white: spores globose, 4 μ: stipe firm, solid, long, generally curved, slightly thickened at the base, white, sometimes pruinose, 10–15 cm. long, 1–2 cm. thick.

TYPE LOCALITY: Greig, New York.
HABITAT: Prostrate trunks of trees in woods.
DISTRIBUTION: Known only from the type locality.

26. **Clitocybe parvula** Murrill, sp. nov.

Pileus minute, convex to nearly plane, with a very small umbo, scattered, 7 mm. broad; surface smooth, glabrous, pale-isabelline, margin entire, concolorous: lamellae adnate with a decurrent tooth, plane, broad, distant, white: stipe slender, equal, rather fleshy, smooth, glabrous, hollow, whitish, attached by a mat of white mycelium, 1 cm. long, 1 mm. thick.

Type collected on the ground in a sugar maple grove at Lake Placid, New York, July 17–29, 1912, *W. A. & Edna L. Murrill 143* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

27. **Clitocybe fellea** Peck, Ann. Rep. N. Y. State Mus. **51**: 284. 1898.

Pileus thin, convex or hemispheric, obtuse or umbilicate, gregarious, 1.2–2.5 cm. broad; surface minutely furfuraceous, pale-yellowish-brown: context whitish, the taste bitter; lamellae thin, subdistant, adnate or slightly decurrent, white: spores broadly ellipsoid, 6–8 × 4–5 μ: stipe equal, firm, glabrous, flexuous, stuffed with a white pith, having a white, mycelioid tomentum at the base, 2.5 cm. long, 2–4 mm. thick.

TYPE LOCALITY: Gansevoort, Saratoga County, New York.
HABITAT: In woods.
DISTRIBUTION: Known only from the type locality.
ILLUSTRATIONS: Ann. Rep. N. Y. State Mus. **51**: *pl. B, f. 8–11.*

28. **Clitocybe flavidella** (Peck) Sacc. Syll. Fung. **5**: 197. 1887.

Agaricus (*Clitocybe*) *flavidellus* Peck, Ann. Rep. N. Y. State Mus. **30**: 38. 1878.

Pileus thin, convex, becoming plane or centrally depressed, often irregular, gregarious, 2.5 cm. broad; surface glabrous, hygrophanous, dingy-yellow when moist, paler or whitish when dry: lamellae crowded, narrow, adnate or slightly decurrent, yellow or yellowish: spores unknown: stipe equal, glabrous, hollow, concolorous, 2–3 cm. long, 3–4 mm. thick.

TYPE LOCALITY: Maryland, Otsego County, New York.
HABITAT: Low, wet ground.
DISTRIBUTION: Known only from the type locality.

29. **Clitocybe subbulbipes** Murrill, sp. nov.

Pileus convex to subexpanded, gregarious or subcespitose, reaching 2 cm. broad; surface smooth, glabrous, not striate, pale-watery-isabelline, hygrophanous, with a pale zone between the margin and disk, margin entire, incurved: lamellae adnate with a slight decurrent tooth, crowded, narrow, white, arcuate: spores broadly ellipsoid, smooth, hyaline, 3.5–5 × 3–4 μ: stipe smooth, glabrous, white, pulverulent-pubescent at the apex, enlarged and whitish-mycelioid at the base, 3 cm. long, 2.5 mm. thick.

Type collected among moss on a much decayed hardwood log at Lake Placid, New York, July 17–29, 1912, *W. A. & Edna L. Murrill 199* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

30. **Clitocybe pulcherrima** Peck, Jour. Myc. **14**: 1. 1908.

Pileus fleshy, convex, becoming umbilicate or centrally depressed, 2.5–5 cm. broad; surface glabrous, lemon-yellow, margin decurved: context white, yellowish beneath the pellicle; lamellae thin, crowded, arcuate, decurrent, whitish or faintly tinged with yellow: spores nearly or quite globose, 4 μ in diameter: stipe equal or slightly tapering upward, solid above, hollow toward the base, subglabrous, colored like or a little paler than the pileus, 2.5–4 cm. long, 6–8 mm. thick.

TYPE LOCALITY: Near Detroit, Michigan.
HABITAT: Among fallen leaves.
DISTRIBUTION: Known only from the type locality.

31. **Clitocybe subhirta** Peck, Bull. N. Y. State Mus. **1**[2]: 11. 1888.

Agaricus (*Clitocybe*) *subhirtus* Peck, Ann. Rep. N. Y. State Mus. **32**: 25. 1880.

Pileus convex or nearly plane, sometimes slightly depressed, 2.5–7 cm. broad; surface at first hairy-tomentose, then nearly glabrous, pale-yellow or buff, becoming whitish, margin incurved: lamellae crowded, adnate or decurrent, whitish or pale-yellow: spores subglobose, 4–5 μ: stipe nearly equal, stuffed or hollow, sometimes eccentric, 2.5–5 cm. long, 6–10 mm. thick.

TYPE LOCALITY: Brewerton, New York.
HABITAT: In woods.
DISTRIBUTION: New York and Massachusetts.

32. **Clitocybe nobilis** Peck, Bull. Torrey Club **34**: 97. 1907.

Pileus fleshy, firm, convex, sometimes becoming slightly centrally depressed, often broadly umbonate, solitary or gregarious, 7–12 cm. broad; surface dry, glabrous, creamy-white, becom-

ing buff or brownish with age or in drying, often darker at the center: context white, the taste and odor agreeable; lamellae thin, crowded, decurrent, whitish: spores ellipsoid, 7–8 × 4–5 μ: stipe solid, stuffed, or hollow with a small cavity, tapering upward, somewhat bulbous, glabrous, firm, white or whitish, becoming pallid or brownish and striate with age or in drying, 5–10 cm. long, 6–8 mm. thick.

TYPE LOCALITY: Deer Lake, Ontario, Canada.
HABITAT: In clearings, growing in black vegetable mold or from buried wood or bark.
DISTRIBUTION: Known only from the type locality.

33. **Clitocybe multiformis** Peck, Mem. N. Y. State Mus. **3**: 141. 1901.

Pileus thin, convex or nearly plane, cespitose, 2.5–7 cm. broad; surface glabrous, whitish, grayish or yellowish when moist, paler when dry, sometimes tinged with brown at the center, margin often lobed or irregular: context white when dry, edible; lamellae thin, narrow, crowded, adnate or slightly decurrent, white or whitish: spores ellipsoid, 5–6 × 3–4 μ: stipe equal, solid, glabrous, white, often flexuous and compressed, 2.5–5 cm. long, 4–6 mm. thick.

TYPE LOCALITY: Albany County, New York.
HABITAT: Low, damp places in woods.
DISTRIBUTION: New York and Massachusetts.
ILLUSTRATIONS: Mem. N. Y. State Mus. **3**: *pl. 47, f. 1–9;* Mycologia **7**: *pl. 164.*

34. **Clitocybe multiceps** Peck, Ann. Rep. N. Y. State Mus. **43**: 17 (63). 1890.

Pileus fleshy, firm, convex, cespitose, rarely solitary, 5–8 cm. broad; surface moist in wet weather, watery-white to pale-avellaneous-isabelline, sometimes slightly silky and brownish at the center, margin often irregular from mutual pressure: context white, the taste oily, slightly disagreeable, edible; lamellae crowded, adnate or slightly decurrent, rarely sinuate, white or whitish: spores globose, 5–8 μ: stipe equal or slightly thickened at the base, firm, glabrous, solid or stuffed, slightly pruinose at the apex, white or whitish, 5–10 cm. long, 7–15 mm. thick.

TYPE LOCALITY: Albany, New York.
HABITAT: Open ground or in grassy places; rarely in groves.
DISTRIBUTION: Canada and the eastern United States south to New Jersey and west to Colorado.
ILLUSTRATIONS: Atk. Stud. Am. Fungi, ed. 2. *f. 93;* Bull. N. Y. State Mus. 139: *pl. 117, f. 7–9;* Mycologia **1**: *pl. 1, f. 4;* **3**: *pl. 52;* Murrill, Ed. Pois. Mushr. *f. 25.*

35. **Clitocybe elephantina** Murrill, sp. nov.

Pileus very large, becoming depressed, cespitose, about 12 cm. broad, the clusters about 30 cm. in width; surface smooth, glabrous, dark-isabelline, margin entire or lobed, becoming irregular with age, concolorous: lamellae adnate or slightly decurrent, very broad, crowded, white: spores globose, smooth, hyaline, 6–8 μ: stipe subequal, smooth, glabrous, whitish or isabelline, hollow, 7–10 cm. long, 2–4 cm. thick.

Type collected in rich soil at La Porte, Indiana, June 27, 1915, by L. B. Clore, and communicated by J. C. Arthur (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

36. **Clitocybe peltigerina** (Peck) Sacc. Syll. Fung. **5**: 184. 1887.

Agaricus (Clitocybe) peltigerinus Peck, Ann. Rep. N. Y. State Mus. **30**: 38. 1878.

Pileus thin, nearly plane, umbilicate, subcespitose at times, 4–10 mm. broad; surface glabrous, hygrophanous, brown and striatulate on the margin when moist, whitish or pale-gray when dry: lamellae subdistant, sometimes branched, decurrent, brownish, the interspaces venose: spores ellipsoid, 8 × 5 μ: stipe nearly equal, solid, glabrous, rather firm, paler than the pileus, often with minute white tomentum at the base, 1–2 cm. long, 1–1.5 mm. thick.

TYPE LOCALITY: Oneida, New York.
HABITAT: Among lichens.
DISTRIBUTION: New York.

37. **Clitocybe subditopoda** Peck, Ann. Rep. N. Y. State Mus. **42**: 114 (18). 1889.

Pileus thin, convex or nearly plane, umbilicate, 1–2.5 cm. broad; surface glabrous, hygrophanous, grayish-brown and striate on the margin when moist, paler when dry: context concolorous, the odor and taste farinaceous; lamellae broad, crowded, adnate, whitish or pale-cinereous: spores ellipsoid, 5–6 × 3–4 μ: stipe equal, glabrous, hollow, concolorous, 2.5–5 cm. long, about 2 mm. thick.

TYPE LOCALITY: North Elba, New York.
HABITAT: Mossy ground in woods.
DISTRIBUTION: New York.

38. **Clitocybe subsquamata** Murrill, Mycologia **7**: 274. 1915.

Agaricus squamulosus Pers. Syn. Fung. 449. 1801. Not *A. squamulosus* Bull. 1785.
Clitocybe squamulosa Quél. Champ. Jura Vosg. 52. 1872.

Pileus thin, obtuse, becoming deeply infundibuliform, 2–4 cm. broad; surface squamulose, fuscous-alutaceous with darker scales, which frequently fall away: context without characteristic odor; lamellae decurrent, distant, watery-white: spores 5–7 × 3–5 μ: stipe spongy-stuffed, elastic, attenuate upward, 4 cm. long.

TYPE LOCALITY: Europe.
HABITAT: In pine woods.
DISTRIBUTION: Northern New York; also in Europe.

39. **Clitocybe dicolor** (Pers.) Murrill, Mycologia **7**: 260. 1915.

Agaricus cyathiformis Bull. Herb. Fr. *pl. 248*. 1785. Not *A. cyathiformis* Schaeff. 1774.
Agaricus dicolor Pers. Syn. Fung. 462. 1801.
Agaricus metachrous Fries, Syst. Myc. **1**: 172. 1821.
Clitocybe metachroa Quél. Champ. Jura Vosg. 216. 1872.

Pileus thin, convex becoming plane or centrally depressed, 2.5–4 cm. broad; surface glabrous, hygrophanous, brownish or grayish-brown when young and moist, whitish when dry, margin slightly striate when old: lamellae thin, narrow, crowded, linear, adnate or slightly decurrent, whitish or cinereous: spores 6–8 × 3–4 μ: stipe equal, tough, externally fibrous, stuffed or hollow, terete or compressed, whitish, mealy or pruinose at the apex, concolorous, 3–4 cm. long, 4–8 mm. thick.

TYPE LOCALITY: Europe.
HABITAT: Pine woods.
DISTRIBUTION: New York; also in Europe.

40. **Clitocybe hiemalis** Murrill, Mycologia **7**: 264. 1915.

Agaricus brumalis Fries, Obs. Myc. **2**: 206. 1818. Not *A. brumalis* Scop. 1772.
Clitocybe brumalis Quél. Champ. Jura Vosg. 54. 1872.

Pileus at first convex or expanded and umbilicate, then infundibuliform, 2.5–5 cm. broad; surface glabrous, hygrophanous, livid when moist, whitish or yellowish when dry, often darker at the center, margin sometimes wavy or lobed: context thin; lamellae arcuate at first, narrow, crowded, decurrent, pallid or yellowish-white: spores 4–5 × 3–4 μ: stipe nearly equal, often slightly curved, stuffed or hollow, glabrous, whitish, sometimes downy at the base, 2–5 cm. long, 2–4 mm. thick.

TYPE LOCALITY: Europe.
HABITAT: Woods.
DISTRIBUTION: New York; also in Europe.
ILLUSTRATIONS: Barla, Fl. Myc. Ill. *pl. 63, f. 1–6*.

41. **Clitocybe virens** (Scop.) Sacc. Syll. Fung. **5**: 152. 1887.

Agaricus virens Scop. Fl. Carn. ed. 2. **2**: 437. 1772.
Agaricus odorus Bull. Herb. Fr. *pl. 176*. 1783.
Agaricus viridis Huds. Fl. Angl. ed. 2. 614. 1778.
Agaricus (*Clitocybe*) *anisarius* Peck, Ann. Rep. N. Y. State Mus. **32**: 26. 1880.

Pileus fleshy, tough, convex, becoming plane or nearly so, obtuse or subumbonate, scattered or subgregarious, 4–7 cm. broad; surface glabrous, moist in wet weather, green or dingy-green, fading with age or on drying, margin even, regular or sometimes wavy: context whitish, the odor pleasant like anise; lamellae thin, crowded, adnate or slightly decurrent, white or becoming pallid: spores 6–8 × 4–5 μ: stipe equal or slightly thickened at the base, stuffed or hollow, elastic, glabrous, whitish or greenish, 2.5–5 cm. long, 4–8 mm. thick.

TYPE LOCALITY: Carniola.
HABITAT: Woods and bushy places.
DISTRIBUTION: Eastern United States from Maine to North Carolina and west to Michigan; also in Europe.
ILLUSTRATIONS: Bull. Conn. Geol. Nat. Hist. Surv. 3: *pl. 17;* Bull. Herb. Fr. *pl. 176; 556, f. 3;* Cooke, Brit. Fungi *pl. 101 (134)*; Fries, Sv. Aetl. Svamp. *pl. 85;* Gill. Champ. Fr. *pl. 113 (134)*; McIlv. Am. Fungi *pl. 24, f. 9;* Sow. Engl. Fungi *pl. 42.*

42. **Clitocybe subclavipes** Murrill, sp. nov.

Pileus convex, subumbonate, solitary or gregarious, 5–8 cm. broad; surface dry, smooth, glabrous, pale-rosy-isabelline with avellaneous shades, often pale-bay on the disk, margin entire, pallid, inflexed on drying: context white, rather firm, the taste nutty; lamellae short-decurrent, narrow, arcuate, distant, firm, white to cream-colored: spores ellipsoid, smooth, hyaline, 5–7 × 3–4 μ: stipe smooth, glabrous, concolorous, solid, conspicuously bulbous and whitish-mycelioid below, 5–8 cm. long, 1–2 cm. thick.

Type collected on the ground in coniferous woods at Lake Placid, New York, October 3–14, 1912, *W. A. & Edna L. Murrill 457* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Adirondack region of New York; Massachusetts.

43. **Clitocybe trullisata** (Ellis) Sacc. Syll. Fung. **5**: 195. 1887.

Agaricus (Clitocybe) trullisatus Ellis, Bull. Torrey Club 5: 45. 1874.

Pileus fleshy, convex or plane, becoming depressed in the center, solitary or sparsely gregarious, 2.5–5 cm. broad; surface innately fibrous, squamose or squamulose, smoother at the center, reddish-flesh-colored, margin thin: lamellae unequal, subdistant, thick, adnate or with a decurrent tooth, at first purplish-violet, then brick-red and pruinose or whitish-pulverulent: spores oblong or cylindric, smooth, granular within, 15–20 × 8–9 μ: stipe stuffed, fibrillose, concolorous, the base enlarged, deeply radicate and clavate-thickened, covered with a mass of mycelium and adhering sand, 2.5–7 cm. long, 5–8 mm. thick.

TYPE LOCALITY: Newfield, New Jersey.
HABITAT: Sandy soil in old fields.
DISTRIBUTION: New York and New Jersey.

44. **Clitocybe sinopica** (Fries) P. Karst. Bidr. Finl. Nat. Folk **32**: 73. 1879.

Agaricus sinopicus Fries, Obs. Myc. **2**: 197. 1818.
Clitocybe sinopicoides Peck, Bull. N. Y. State Mus. 157: 80. 1912.

Pileus fleshy but thin, plane or centrally depressed, often umbilicate, 2–4 cm. broad; surface dry, glabrous or becoming flocculose and rivulose, ochraceous-red or fulvous, sometimes becoming paler with age: context white, the odor farinaceous; lamellae crowded, rather broad, slightly decurrent, white becoming yellowish: spores ellipsoid, smooth, hyaline, 6–8 × 3.5–5 μ: stipe equal, somewhat fibrillose, stuffed, concolorous, 2.5–5 cm. long, 2–4 mm. thick.

TYPE LOCALITY: Europe.
HABITAT: Woods and on burnt ground in open places.
DISTRIBUTION: Throughout temperate North America south to South Carolina; also in Europe.
ILLUSTRATIONS: Gill. Champ. Fr. *pl. 105 (142)*.

45. **Clitocybe inversa** (Scop.) Quél. Champ. Jura Vosg. 214. 1872.

Agaricus inversus Scop. Fl. Carn. ed. 2. **2**: 445. 1772.
Agaricus gilvus Pers. Syn. Fung. 448. 1801.
Agaricus (Clitocybe) maculosus Peck, Bull. Buffalo Soc. Nat. Sci. **1**: 45. 1873. Not *A. maculosus* Pers. 1801.

Agaricus (Clitocybe) subzonalis Peck, Bull. Buffalo Soc. Nat. Sci. **1**: 46. 1873.
Clitocybe biformis Peck, Bull. N. Y. State Mus. 150: 25. 1911.

Pileus fleshy, convex, becoming infundibuliform, obtuse, fragile, gregarious or cespitose, 5–8 cm. broad; surface glabrous, moist when fresh, brick-colored, reddish, or tan-colored, margin thin, involute: context yellowish; lamellae crowded, simple, decurrent, pallid or yellowish, becoming reddish: spores 4.5–5 × 3–4 μ: stipe equal or nearly so, slightly rigid, spongy-stuffed or hollow, glabrous, whitish, often tomentose at the base, 4–8 cm. long, 4–8 mm. thick.

TYPE LOCALITY: Carniola.
HABITAT: In humus in woods or groves.
DISTRIBUTION: Northern United States from Maine to New York and west to Washington and California; also in Europe.
ILLUSTRATIONS: Ann. Rep. N. Y. State Mus. **54**: *pl. 69, f. 14–21;* Bull. Herb. Fr. *pl. 553* (as *A. infundibuliformis*); Bull. N. Y. State Mus. 150: *pl. VI, f. 9–15;* Cooke, Brit. Fungi *pl. 84* (*159*).

46. **Clitocybe subconcava** Peck, Bull. N. Y. State Mus. **10**: 948. 1902.

Pileus thin, convex, deeply umbilicate, 2.5–5 cm. broad; surface glabrous, hygrophanous, brownish or reddish-brown, whitish when dry, margin decurved, usually striatulate when moist: lamellae arcuate, decurrent, crowded, pallid or subcinereous: spores ellipsoid, 5–6 × 3–4 μ: stipe equal, firm, solid or stuffed, sometimes fistulose, slightly fibrillose, concolorous, 2.5–5 cm. long, 3–4 mm. thick.

TYPE LOCALITY: Bolton, New York.
HABITAT: Pine woods.
DISTRIBUTION: Known only from the type locality.
ILLUSTRATIONS: Bull. N. Y. State Mus. **10**: *pl. K, f. 8–13.*

47. **Clitocybe compressipes** (Peck) Sacc. Syll. Fung. **5**: 184. 1887.

Agaricus (Clitocybe) compressipes Peck, Ann. Rep. N. Y. State Mus. **33**: 18. 1883.

Pileus thin, convex or nearly plane, umbilicate, gregarious, 2–3 cm. broad; surface glabrous, hygrophanous, brownish when moist, whitish or pale-tan-colored when dry: context white when dry, the odor slight, farinaceous; lamellae crowded, subarcuate or horizontal, adnate or slightly decurrent, whitish; spores 5–6 × 4–4.5 μ: stipe firm, hollow, generally compressed, often slightly tapering upward, slightly pruinose, concolorous, 2–4 cm. long, 2–4 mm. thick.

TYPE LOCALITY: Albany, New York.
HABITAT: In pastures or grassy places.
DISTRIBUTION: New York; reported from Wisconsin.

48. **Clitocybe pinophila** (Peck) Sacc. Syll. Fung. **5**: 183. 1887.

Agaricus (Clitocybe) pinophilus Peck, Ann. Rep. N. Y. State Mus. **31**: 32. 1879.

Pileus fleshy, thin, convex, becoming umbilicate or centrally depressed, gregarious, about 2.5 cm. broad; surface glabrous, pale-tan-colored when moist, paler when dry, margin sometimes striate on drying: context with a farinaceous odor and taste; lamellae rather crowded, subarcuate, adnate or slightly decurrent, whitish: spores broadly ellipsoid or subglobose, 5–6 × 4–5 μ: stipe equal, glabrous or slightly pruinose, concolorous, 2.5–5 cm. long, 2–4 mm. thick.

TYPE LOCALITY: Albany, New York.
HABITAT: Under or near pine trees.
DISTRIBUTION: New York.

49. **Clitocybe infundibuliformis** (Schaeff.) Quél. Champ. Jura Vosg. 52. 1872.

Agaricus infundibuliformis Schaeff. Fung. Bavar. **4**: Ind. 49. 1774.

Pileus at first convex and slightly umbonate, becoming infundibuliform, solitary or scattered, rarely tufted, 4–7 cm. broad; surface dry, reddish or pale-tan-colored, fading with age, margin thin, minutely silky: context white, edible; lamellae thin, rather crowded, decurrent,

white or whitish: spores 5–6 × 3–4 μ: stipe equal or tapering upward, spongy or stuffed, soft, elastic, concolorous or rarely whitish, 5–7 cm. long, 6–10 mm. thick.

TYPE LOCALITY: Europe.
HABITAT: Among fallen leaves in woods.
DISTRIBUTION: Temperate North America as far west as Iowa and Colorado; also in Europe.
ILLUSTRATIONS: Ann. Rep. N. Y. State Mus. **48**: *pl. 24, f. 1–6;* Bull. Conn. Geol. Nat. Hist. Surv. **3**: *pl. 19;* Cooke, Brit. Fungi *pl. 107* (*152*).

50. **Clitocybe vilescens** (Peck) Sacc. Syll. Fung. **5**: 184. 1887.

Agaricus (*Clitocybe*) *vilescens* Peck, Ann. Rep. N. Y. State Mus. **33**: 19. 1883.

Pileus convex becoming plane or centrally depressed, sometimes irregular, gregarious, 2.5–4 cm. broad; surface glabrous, slightly pruinose on the margin, brown or grayish-brown, becoming paler with age, sometimes concentrically rivulose, margin involute: context pale-gray; lamellae crowded, adnate or decurrent, cinereous or tinged with dingy-yellow: spores subglobose, 5–6×4–5 μ: stipe short, equal, solid, sometimes compressed, grayish-brown with whitish tomentum at the base, 2–5 cm. long, 2–4 mm. thick.

TYPE LOCALITY: Jamesville, New York.
HABITAT: Bushy places and pastures.
DISTRIBUTION: New York.

51. **Clitocybe lactariiformis** Murrill, sp. nov.

Pileus convex to expanded, becoming depressed or umbilicate, gregarious, 2–3 cm. broad; surface dry, smooth, glabrous, pale-smoky-gray or murinous, darker gray on the disk: context very thin, white, the odor not characteristic; lamellae decurrent, arcuate, narrow, subcrowded, white: spores ellipsoid, smooth, hyaline, 5 × 3 μ: stipe cylindric, smooth, glabrous, hollow, usually white but at times concolorous, 3–4 cm. long, 2–4 mm. thick.

Type collected in humus in mixed woods at Unaka Springs, Tennessee, August 18–24, 1904, *W. A. Murrill* (herb. N. Y. Bot. Gard.).
HABITAT: In humus in moist, mixed woods.
DISTRIBUTION: Southern Pennsylvania, Virginia, Tennessee, and Alabama.

52. **Clitocybe concava** (Scop.) Gill. Champ. Fr. 150. 1874.

Agaricus concavus Scop. Fl. Carn. ed. 2. **2**: 449. 1772.
Agaricus cyathiformis Fries, Syst. Myc. **1**: 173. 1821. Not *A. cyathiformis* Bull. 1785.
Agaricus Poculum Peck, Ann. Rep. N. Y. State Cab. **23**: 77. 1872.

Pileus fleshy but thin, centrally depressed or infundibuliform, 4–5 cm. broad; surface hygrophanous, glabrous or nearly so, blackish-brown or grayish-brown when moist, paler when dry, margin smooth or occasionally striate when old: context concolorous, separable into two horizontal layers; lamellae distant, adnate or decurrent, united behind, dingy or grayish-brown: spores ellipsoid, 8–9 × 4–5 μ: stipe equal or slightly tapering upward, stuffed or hollow, fibrillose, obscurely reticulate on account of the fibrils, concolorous, 5–10 cm. long, 2–5 mm. thick.

TYPE LOCALITY: Carniola.
HABITAT: Decaying wood or on the ground in woods or in mossy fields.
DISTRIBUTION: Temperate North America south to South Carolina and west to Oregon; also in Europe.
ILLUSTRATIONS: Bull. Herb. Fr. *pl. 568, f. 1; pl. 575;* Cooke, Brit. Fungi *pl. 113* (*166*); Gill. Champ. Fr. *pl. 94* (*116*); Hussey, Ill. Brit. Myc. **2**: *pl. 1;* Lucand, Champ. Fr. *pl. 180;* Sow. Engl. Fungi *pl. 363;* Vaillant, Bot. Paris. *pl. 14, f. 1–3.*

53. **Clitocybe fumosa** (Pers.) Quél. Champ. Jura Vosg. 214. 1872.

Agaricus fumosus Pers. Syn. Fung. 348. 1801.

Pileus fleshy, convex becoming nearly plane, obtuse, somewhat gibbous when young, regular or irregular, gregarious or rarely cespitose, 5–7.5 cm. broad; surface smooth, glabrous, sooty-brown, becoming livid when moist, gray when dry: context whitish when dry; lamellae crowded, adnate or decurrent, grayish-white: spores subglobose, 6–7 μ: stipe nearly equal,

solid or stuffed, fibrous, fleshy, glabrous, mealy at the apex, dingy-white, 5–7.5 cm. long, 4–10 mm. thick.

TYPE LOCALITY: Europe.
HABITAT: Woods and grassy places.
DISTRIBUTION: New England to North Carolina in the eastern United States; also in Europe.

54. **Clitocybe media** Peck, Ann. Rep. N. Y. State Mus. **42**: 114 (18). 1889.

Pileus fleshy, convex, becoming plane or slightly depressed at the center, 5–19 cm. broad; surface grayish-brown or blackish-brown, not polished, margin often wavy or irregular: context white, the taste mild; lamellae broad, subdistant, adnate or decurrent, whitish, the interspaces often venose: spores ellipsoid, 8 × 5 μ: stipe equal or nearly so, solid, elastic, concolorous or a little paler, 2.5–5 cm. long, 8–16 mm. thick.

TYPE LOCALITY: North Elba, New York.
HABITAT: Mossy ground in woods.
DISTRIBUTION: New York and Wisconsin.
ILLUSTRATIONS: Ann. Rep. N. Y. State Mus. **42**: *pl. 1, f. 9–12*; **48**: *pl. 23, f. 1–7*.

55. **Clitocybe clavipes** (Pers.) Quél. Champ. Jura Vosg. 48. 1872.

Agaricus clavipes Pers. Syn. Fung. 353. 1801.
Agaricus carnosior Peck, Ann. Rep. N. Y. State Cab. **23**: 76. 1872.

Pileus very fleshy, convex or nearly plane, obconic, obtuse or with a small umbo, solitary, gregarious, or rarely cespitose, 5–7.5 cm. broad; surface grayish-brown or sooty-brown, sometimes darker at the center: context white, soft, edible, the taste mild; lamellae rather broad, subdistant, decurrent, white or cream-colored: spores ellipsoid, 6–8 × 4–5 μ: stipe tapering upward from the thickened or subbulbous base, solid, elastic, soft and spongy within, glabrous or slightly fibrillose, concolorous or a little paler, 4–6 cm. long, 6–12 mm. thick at the apex, 1.5–2.5 cm. thick at the base.

TYPE LOCALITY: Europe.
HABITAT: In humus in deciduous or coniferous woods.
DISTRIBUTION: Canada to North Carolina and west to Oregon; also in Europe.
ILLUSTRATIONS: Ann. Rep. N. Y. State Mus. **49**: *pl. 45, f. 1–7*; Fries, Ic. Hymen. *pl. 47*.

56. **Clitocybe coloradensis** Murrill, sp. nov.

Pileus large, thick, fleshy, convex to plane or slightly depressed, gregarious, 10–15 cm. broad; surface dry, smooth, glabrous, avellaneous, margin concolorous, entire, splitting with age: context white, the odor and taste farinaceous; lamellae adnate to strongly decurrent, rather crowded, broad, pale-pinkish-cinnamon, becoming brownish with age or on drying: spores narrowly ellipsoid, smooth, hyaline, 6.5–8.5 × 3.5–5 μ: stipe subequal, smooth, glabrous, subconcolorous, solid or stuffed, becoming hollow, about 10 cm. long and 1–2 cm. thick.

Type collected on the ground under willows at Boulder Park, Tolland, Colorado, 2,700 m. elevation, July 7, 1914, *L. O. Overholts 1890* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

57. **Clitocybe Earlei** Murrill, Mycologia **7**: 261. 1915.

Pileus thin, rather tough, convex to expanded, subumbonate, solitary or gregarious, reaching 8 cm. broad; surface glabrous, shining, subhygrophanous, smooth, dark-seal-brown when moist, fuscous when dry, margin entire, concolorous, inflexed: context firm, white with a brownish tint, the taste mild, slightly mawkish, the odor not characteristic; lamellae short-decurrent, several times inserted, some of them forking, densely crowded, narrow, white: spores ellipsoid, smooth, hyaline, 7.5–9 × 5–6.5 μ: stipe subcylindric, enlarged at the base, pallid when young, soon becoming concolorous, solid, smooth, glabrous, reaching 15 cm. long and 1–1.5 cm. thick.

TYPE LOCALITY: West Park, New York.
HABITAT: On the ground in mixed woods.
DISTRIBUTION: Known only from the type locality.

58. **Clitocybe pusilla** Peck, Bull. Torrey Club **22**: 199. 1895.

Pileus hemispheric to nearly plane, obtuse with a small umbo, densely gregarious or subcespitose, 5 to 15 mm. broad; surface grayish, dry, pruinose: context often whitish; lamellae adnate or decurrent, crowded, narrow, white: spores subglobose or very broadly ellipsoid, 4–5 μ long: stipe short, pruinose, grayish, solid, 1–2 cm. long, 2 mm. thick.

TYPE LOCALITY: Pasadena, California.
HABITAT: On manure.
DISTRIBUTION: Known only from the type locality.

59. **Clitocybe subfumosipes** Murrill, Mycologia **5**: 212. 1913.

Pileus small, rather thin, convex to plane, gregarious to subcespitose, 2.5 cm. broad; surface white, smooth, glabrous, shining, avellaneous on the small umbo, margin entire, concolorous, inflexed on drying: lamellae decurrent, rather broad and distant, white, becoming discolored on drying: spores ellipsoid, smooth, hyaline, 5–6 × 2.5–3.5 μ: stipe equal, smooth, pruinose, especially above. white changing to pale-fumosous on drying, hollow, 3–4 cm. long, 2–3 mm. thick.

TYPE LOCALITY: Seattle, Washington.
HABITAT: In humus in woods.
DISTRIBUTION: Known only from the type locality.

60. **Clitocybe microspora** Peck, Bull. Torrey Club **36**: 331. 1909.

Pileus thin, broadly convex or slightly depressed at the center, often eccentric, 2.5–6 cm. broad; surface dry, glabrous or finely and obscurely fibrillose when old, white or cream-colored, margin sometimes irregular or lobed: context white, the odor and taste farinaceous; lamellae thin, crowded, narrow, unequal, decurrent, white: spores minute, globose or broadly ellipsoid, 3–4 μ: stipe equal, subcartilaginous, hollow, concolorous, 2.5–3 cm. long, 6–8 mm. thick.

TYPE LOCALITY: Claremont, California.
DISTRIBUTION: Known only from the type locality.

61. **Clitocybe subdicolor** Murrill, sp. nov.

Pileus thin, convex to depressed, gregarious, 2–4 cm. broad; surface smooth, glabrous, moist, hygrophanous, whitish or yellowish, margin thin, white, entire: context thin, watery, whitish, the taste somewhat nutty, the odor not characteristic; lamellae short-decurrent or adnate, narrow, of medium distance, white, sometimes becoming slightly discolored or with a faint lilac tint: spores ellipsoid, smooth, hyaline, 5–7 × 3–4 μ: stipe central, subequal, fleshy, hollow, smooth, glabrous, yellowish, 4–6 cm. long, about 5 mm. thick.

Type collected in humus in a dense redwood forest at La Honda, near Palo Alto, California, November 25, 1911, *W. A. Murrill & L. R. Abrams 1247* (herb. N. Y. Bot. Gard.).
HABITAT: On the ground in coniferous forests.
DISTRIBUTION: Washington, Oregon, and California.

62. **Clitocybe washingtonensis** Murrill, Mycologia **5**: 214. 1913.

Pileus fleshy, convex to plane or very slightly depressed, usually gibbous, gregarious, reaching 5–6 cm. broad; surface white, smooth, glabrous, dry, somewhat shining, margin entire, concolorous: lamellae decurrent, distant, rather narrow, white to slightly discolored: spores subglobose to ellipsoid, smooth, hyaline, 6–7 × 3–4 μ: stipe subequal, fleshy, solid or stuffed, smooth, glabrous, whitish-mycelioid at the base, 3.5–5 cm. long, 5–8 mm. thick.

TYPE LOCALITY: Seattle, Washington.
HABITAT: In humus in woods.
DISTRIBUTION: Known only from the type locality.

63. **Clitocybe variabilis** Murrill, Mycologia **5**: 213. 1913.

Pileus fleshy but rather thin, plane or slightly depressed, rarely umbonate when young, gregarious, reaching 6 cm. broad; surface dry, smooth, glabrous, white, margin thin, usually entire, concolorous: lamellae narrow, usually more or less crowded, decurrent, white: spores

ovoid, smooth, hyaline, uninucleate, about 6 × 4 μ: stipe tapering upward from a thickened base, smooth, glabrous, white, whitish-mycelioid at the base, hollow, reaching 6 cm. long and 8 mm. thick, scarcely 3 cm. long in one collection.

TYPE LOCALITY: Mill City, Oregon.
HABITAT: On the ground in fir forests.
DISTRIBUTION: Washington and Oregon.

64. **Clitocybe stipitata** Murrill, Mycologia 5: 211. 1913.

Pileus large, fleshy, convex to nearly plane, gregarious, 8–10 cm. broad; surface smooth, glabrous, slightly viscid when moist, white, becoming cream-colored on drying, margin entire or slightly lobed, rather thick and fleshy, concolorous: lamellae broad, crowded, decurrent, white: spores ovoid, smooth, hyaline, 6–7 × 5–6 μ: stipe equal, very long, crooked, smooth, subglabrous, whitish-mycelioid below, white, becoming reddish-brown in some specimens on drying, solid or spongy within, 15 or more cm. long, about 1.5 cm. thick.

TYPE LOCALITY: Stanford University, California.
HABITAT: Among leaves in woods.
DISTRIBUTION: Known only from the type locality.

65. **Clitocybe albiformis** Murrill, Mycologia 5: 206. 1913.

Pileus thick, firm, convex, cespitose, 5–9 cm. broad; surface nearly smooth, dry, glabrous, white, slightly cremeous at the center, margin entire, concolorous, strongly inflexed on drying: context thick, white, with the odor and taste of the ordinary field mushroom; lamellae distinctly decurrent, rather broad and crowded, several times inserted, plane or arcuate: spores globose or subglobose, smooth, hyaline, 4–6 μ: stipe cylindric to ventricose, tapering upward at times, white, solid, slightly fibrillose below, finely tomentose above, 9–16 cm. long, 1–2.5 cm. thick.

TYPE LOCALITY: Searsville Lake, California.
HABITAT: In humus in woods.
DISTRIBUTION: Washington and California.

66. **Clitocybe subcandicans** Murrill, Mycologia 5: 212. 1913.

Pileus convex to plane, rather thin, solitary, reaching 6 cm. broad; surface stramineous, smooth, glabrous, hygrophanous, margin white: lamellae decurrent, arcuate, crowded: spores ellipsoid, smooth, uninucleate, hyaline, 6–7 × 3–4 μ: stipe cylindric, equal, concolorous, subfleshy, hollow, 6 cm. long, 5–7 mm. thick.

TYPE LOCALITY: Seattle, Washington.
HABITAT: On the ground among fallen twigs in woods.
DISTRIBUTION: Known only from the type locality.

67. **Clitocybe Peckii** Murrill, Mycologia 5: 211. 1913.

Pileus irregular in outline, umbilicate to depressed, rather deeply depressed on drying, gregarious, reaching 5 cm. broad; surface hygrophanous, smooth, glabrous, grayish-stramineous, faintly radiate-striate on drying, margin thin, somewhat lobed, concolorous, becoming upturned: lamellae discolored, rather crowded, short-decurrent: spores usually broadly ellipsoid, smooth, hyaline, 5–6 × 4–5 μ: stipe slightly tapering upward, concolorous, smooth, glabrous, hollow or stuffed, reaching 4 cm. long and 7 mm. thick.

TYPE LOCALITY: Salem, Oregon.
HABITAT: In soil.
DISTRIBUTION: Washington and Oregon.

68. **Clitocybe oregonensis** Murrill, Mycologia 5: 211. 1913.

Pileus umbilicate to infundibuliform, rather thin, solitary, reaching 4 cm. broad; surface smooth, glabrous, hygrophanous, pale-isabelline, margin thin, entire, concolorous: lamellae short-decurrent, subdistant, narrow, arcuate, discolored on drying: spores ellipsoid, smooth, hyaline, 7 × 4 μ: stipe fleshy, tapering upward, smooth, glabrous, concolorous, 5 cm. long, 5 mm. thick.

TYPE LOCALITY: Mill City, Oregon.
HABITAT: On the ground in mixed woods.
DISTRIBUTION: Oregon.

69. **Clitocybe rugosipes** Murrill, sp. nov.

Pileus very thin, convex to slightly depressed, gregarious, 3–5 cm. broad; surface smooth, glabrous, moist, hygrophanous, not striate, dull-isabelline, margin entire or undulate, concolorous, very irregular and much folded on drying: lamellae short-decurrent, narrow, crowded, white: spores ellipsoid, smooth, hyaline, 6–7 × 4–5 μ: stipe short, subequal, rugose, compressed, hollow, with a thin rind, smooth, glabrous, whitish, 3–4 cm. long, 5–10 mm. thick.

Type collected in humus at Berkeley, California, February 7, 1911, *R. A. Harper 29* (herb. N. Y. Bot. Gard.).
HABITAT: On the ground in shaded places.
DISTRIBUTION: Vicinity of Berkeley, California.

70. **Clitocybe vialis** Murrill, sp. nov.

Pileus broad and thin, convex to plane, gibbous, solitary, 6 cm. broad; surface smooth, glabrous, pale-isabelline, margin somewhat lobed, concolorous, inflexed on drying: lamellae adnate, narrow, crowded, dull-rosy-isabelline, becoming darker on drying or when bruised: spores ellipsoid, smooth, hyaline, 7–8 × 4–5 μ: stipe rather slender, solid, smooth, glabrous, concolorous, slightly enlarged at the base, 2.5 cm. long, 6 mm. thick.

Type collected between railway ties on a railroad in the open at Corvallis, Oregon, November 6–11, 1911, *W. A. Murrill 941* (herb. N. Y. Bot. Gard.).
DISTRIBUTION: Known only from the type locality.

71. **Clitocybe cuticolor** Murrill, Mycologia **5**: 208. 1913.

Pileus convex to subplane, thin, 3 cm. broad; surface smooth, glabrous, hygrophanous, dull-rosy-isabelline with a fulvous tint, margin entire, concolorous, incurved on drying; lamellae adnate, crowded, nearly plane, narrow, dull-rosy-isabelline: spores ellipsoid, smooth, hyaline, about 6.5–7 × 3–4 μ: stipe eccentric, tapering upward from a bulbous base, fleshy, solid or stuffed, smooth, glabrous, rosy-isabelline, 4 cm. long, 7 mm. thick.

TYPE LOCALITY: Seattle, Washington.
HABITAT: On the ground in woods.
DISTRIBUTION: Known only from the type locality.

72. **Clitocybe hondensis** Murrill, Mycologia **5**: 209. 1913.

Pileus convex, gibbous, solitary, 3 cm. broad; surface dry or moist, smooth, glabrous, subfulvous, minutely radiate-lineate, margin thin, entire, paler: lamellae decurrent, arcuate, many times inserted, crowded, pallid: spores ellipsoid, smooth, hyaline, 5.5 × 3.5 μ: stipe equal, crooked, whitish, smooth, glabrous, hollow, 6 cm. long, 6 mm. thick.

TYPE LOCALITY: La Honda, near Palo Alto, California.
HABITAT: In rich soil under redwoods.
DISTRIBUTION: Known only from the type locality.

73. **Clitocybe subinversa** Murrill, Mycologia **5**: 212. 1913.

Pileus convex, slightly depressed, rather thin, gregarious, 3–5 cm. broad; surface smooth, moist, glabrous, very light brown, fulvous when dry, margin thin, incurved, entire, somewhat irregular, concolorous: context cream-colored, without characteristic taste or odor; lamellae decurrent, narrow, arcuate, many times inserted, rather firm, white: spores globose or subglobose, smooth, hyaline, 3–4.5 μ: stipe cylindric, equal, somewhat crooked, tomentose or fibrillose, subglabrous, paler than the pileus, hollow, 3–7 cm. long, 3–6 mm. thick.

TYPE LOCALITY: Portola, California.
HABITAT: In humus under redwoods.
DISTRIBUTION: Oregon and California.

74. **Clitocybe avellaneialba** Murrill, Mycologia **5**: 207. 1913.

Pileus large, thin, slightly umbonate, becoming infundibuliform, gregarious to cespitose, reaching 10 cm. or more broad; surface hygrophanous, avellaneous to dark-fuliginous, subzonate, innate-radiate-fibrillose, hispid-fibrillose at the center, margin entire, concolorous: context thin, white, of mild flavor; lamellae short-decurrent, rather crowded and narrow, white: spores ellipsoid, pointed at both ends, smooth, hyaline, 7–8 × 5 μ: stipe tapering upward, whitish-mycelioid at the base, avellaneous, finely fibrillose to glabrous, solid or hollow with a tough rind, reaching 10 cm. or more long and 1 cm. thick.

TYPE LOCALITY: Seattle, Washington.
HABITAT: In humus on the ground in woods or among leaves and sticks under redwoods.
DISTRIBUTION: Washington and California.

75. **Clitocybe oculata** Murrill, Mycologia **5**: 210. 1913.

Pileus convex to plane, slightly depressed at the center, thin, solitary, reaching 4.5 cm. broad; surface dry, smooth, finely furfuraceous, avellaneous, fuliginous at the center, margin very thin, entire, even, concolorous: lamellae short-decurrent, distant, white: spores broadly ovoid, smooth, hyaline, granular, 9–12 × 7–8 μ: stipe equal, twisted, hollow, with a tough rind, furfuraceous, whitish with a pale-avellaneous tint, 6 cm. long, 5 mm. thick.

TYPE LOCALITY: Mill City, Oregon.
HABITAT: In low woods, probably attached to buried wood.
DISTRIBUTION: Known only from the type locality.

76. **Clitocybe oreades** Murrill, Mycologia **5**: 210. 1913.

Pileus large, fleshy, convex, becoming plane or slightly depressed with age, usually growing in circles, 6–10 cm. broad, very thick at the center; surface smooth, somewhat viscid when moist, glabrous, shining, cinereous to murinous, sometimes covered with a whitish mold, margin entire, concolorous, deflexed when young, at times becoming upturned and more or less split with age: context thick, white, with an agreeable but not characteristic taste and odor; lamellae short-decurrent, varying to adnate, especially when young, crowded, narrow, arcuate, white or pale-yellowish-white: spores ellipsoid, smooth, hyaline, 6–8 × 3–4 μ: stipe very large, enlarged or bulbous below, fleshy, white or slightly cinereous, smooth, minutely tomentose or fibrillose above, solid, 10–15 cm. long, 1.5–2.5 cm. thick, reaching 4 cm. or more at the base.

TYPE LOCALITY: Searsville Lake, California.
HABITAT: In humus under redwoods.
DISTRIBUTION: Oregon, Washington, and California.

77. **Clitocybe violaceifolia** Murrill, Mycologia **5**: 213. 1913.

Pileus convex, somewhat gibbous, solitary, 3 cm. broad; surface slightly viscid when moist, smooth, glabrous, grayish-violet tinged with brown at the center, margin entire, slightly paler: lamellae very narrow, adnexed to slightly decurrent, rather crowded, arcuate, pale-violet: spores ellipsoid, smooth, hyaline, 7–8 × 3.5–4.5 μ: stipe equal, fleshy, solid, smooth, glabrous, grayish-violet, mycelioid at the base, 3 cm. long, 6 mm. thick.

TYPE LOCALITY: Salem, Oregon.
HABITAT: On decaying wood.
DISTRIBUTION: Known only from the type locality.

78. **Clitocybe murinifolia** Murrill, Mycologia **5**: 210. 1913.

Pileus convex to slightly depressed, rather thin, solitary, about 2 cm. broad; surface smooth, glabrous, smoky-brown, margin thin, slightly lobed, concolorous, inflexed on drying, pruinose when young: lamellae short-decurrent, not crowded, rather narrow, murinous: spores globose, smooth, hyaline, 2–3 μ: stipe fleshy, slightly tapering upward, smooth, glabrous, murinous, solid, whitish-tomentose at the base, 2 cm. long, 7–9 mm. thick.

TYPE LOCALITY: Seattle, Washington.
HABITAT: In humus in woods.
DISTRIBUTION: Known only from the type locality.

79. **Clitocybe atrialba** Murrill, Mycologia 5: 207. 1913.

Pileus convex to slightly depressed and at length infundibuliform, regular in outline, solitary or gregarious, reaching 6 cm. broad; surface at first smooth, glabrous, dry, fuliginous-ater, becoming finely imbricate from the breaking up of the cuticle; margin entire, concolorous, strongly inflexed on drying: context thin, white, tough, with mild flavor; lamellae decurrent, not crowded, white, becoming grayish-discolored: spores globose to subglobose, smooth, hyaline, granular, 8.5–10 × 7–8 μ: stipe equal or slightly tapering upward, flattened or twisted at times, dry, furfuraceous or finely scabrous, avellaneous, hollow, with rather tough rind, 5–10 cm. long, 6–10 mm. thick.

TYPE LOCALITY: Seattle, Washington.
HABITAT: On decayed buried wood in woods.
DISTRIBUTION: Washington and California.

80. **Clitocybe brunnescens** Murrill, Mycologia 5: 208. 1913.

Pileus rather thin, slightly depressed, rarely infundibuliform, reaching 4 cm. broad; surface slightly viscid when moist, smooth, glabrous, dull-avellaneous, margin entire, concolorous: context thin, whitish, with strongly farinaceous odor: lamellae decurrent, subcrowded, narrow, dull-avellaneous, becoming dark-fuliginous, especially on the edges: spores globose, smooth, hyaline, 3–3.5 μ: stipe subequal, smooth, glabrous, concolorous above, whitish-tomentose below, stuffed or hollow, 3–4 cm. long, 4–7 mm. thick.

TYPE LOCALITY: Seattle, Washington.
HABITAT: Among sticks in woods.
DISTRIBUTION: Known only from the type locality.

81. **Clitocybe griseifolia** Murrill, Mycologia 5: 208. 1913.

Pileus large, fleshy, convex to expanded or slightly depressed, usually solitary, reaching 9 cm. broad; surface slightly viscid when moist, smooth, glabrous, grayish-white or avellaneous, tinged with brownish-avellaneous at the center, margin thin, somewhat lobed, slightly paler, strongly incurved on drying: context white, fragrant; lamellae rather broad and crowded, short-decurrent or rarely adnate, grayish to dirty-white: spores ellipsoid, smooth, hyaline, 5–6 × 3–3.5 μ: stipe bulbous, tapering upward, smooth, glabrous, stuffed, white, 6–9 cm. long, about 1 cm. thick, 2 cm. or more thick at the base.

TYPE LOCALITY: Seattle, Washington.
HABITAT: In humus in woods.
DISTRIBUTION: Washington, Oregon, and California.

82. **Clitocybe Harperi** Murrill, Mycologia 5: 209. 1913.

Pileus convex to plane, subcespitose, reaching 8–10 cm. broad; surface dry, smooth, glabrous, cinereous to pale-murinous, margin entire, concolorous, inrolled: context white, the taste mild; lamellae short-decurrent, of medium distance, narrow, slightly arcuate or plane, several times inserted, cinereous, sometimes with a greenish tint: spores ellipsoid, smooth, hyaline, 4–6 × 2–3 μ: stipe bulbous, whitish-mycelioid at the base, concolorous, pruinose, hollow, 3–7 cm. long, 1–3 cm. thick.

TYPE LOCALITY: Golden Gate Park, San Francisco, California.
HABITAT: On the ground in woods or groves.
DISTRIBUTION: California.

83. **Clitocybe niveicolor** Murrill, Mycologia 3: 190. 1911.

Entire hymenophore snow-white, gregarious: pileus compressed-convex, reaching 7 mm. in diameter; surface smooth, glabrous, appearing subtomentose when dry because of the loosely woven context, margin slightly irregular, decurved: lamellae decurrent, distant, slightly arcuate: spores ovoid, smooth, hyaline, 12 × 7 μ: stipe cylindric, slightly tapering upward, glabrous, fleshy, fistulose, 1–1.5 cm. long, 1 mm. thick above, 1.5 mm. below.

TYPE LOCALITY: Motzorongo, Mexico.
HABITAT: On the ground in humus in a moist virgin forest.
DISTRIBUTION: Known only from the type locality.

84. **Clitocybe trojana** Murrill, Mycologia **3**: 190. 1911.

Pileus subhemispheric, regular, solitary, 1 cm. broad; surface dry, smooth, glabrous, pale-isabelline; margin regular, concolorous, incurved on drying: lamellae decurrent, rather crowded, white: spores ovoid, smooth, hyaline, 5 × 4 μ: stipe straight, tapering upward, subconcolorous, glabrous, 2.5 cm. long, 1–1.5 mm. thick.

TYPE LOCALITY: Troy and Tyre, Jamaica.
HABITAT: On the ground in woods.
DISTRIBUTION: Known only from the type locality.

85. **Clitocybe Broadwayi** Murrill, Mycologia **3**: 192. 1911.

Hymenophore gregarious to subcespitose, rather large, abundant, strongly suggesting *Melanoleuca alboflavida*, but with distinctly decurrent lamellae: pileus thin, convex, depressed to umbilicate, often indented on the side next to the stipe owing to its clustered arrangement, 5–8 cm. broad; surface glabrous, faintly radiate-striate, dry, white or pale-isabelline, margin incurved, concolorous, blackening when bruised: lamellae decurrent, narrow, crowded, white: spores ellipsoid, smooth, hyaline, 5–7 × 3.5–4.5 μ: stipe curved, cylindric, usually equal, glabrous, toughish, slightly reddish-brown, twisted and finely grooved when dry, suggesting asbestos, 5–7 cm. long, 2–4 mm. thick.

TYPE LOCALITY: Tanteen, St. George's, Grenada.
HABITAT: On the ground among leaves in a cocoa plantation.
DISTRIBUTION: Grenada.

86. **Clitocybe mexicana** Murrill, Mycologia **3**: 191. 1911.

Pileus convex to depressed, irregularly lobed, gregarious, scarcely cespitose, 7 cm. broad; surface smooth, glabrous, nearly white, with an avellaneous-isabelline tint, margin striate, involute when young: context 1 cm. thick at the center, milk-white, sweet, the odor none when fresh but strong and not unpleasant on drying: lamellae decurrent, crowded, rather narrow, tapering at each end, pale-watery-white: spores fusiform, smooth, hyaline, 7 μ long: stipe enlarging slightly above, dealbate, glabrous, finely tomentose near the base, hollow, white inside, with a tough rind, 7 cm. long, nearly 2 cm. thick.

TYPE LOCALITY: Jalapa, Mexico.
HABITAT: On the ground among humus in a moist virgin forest.
DISTRIBUTION: Known only from the type locality.

87. **Clitocybe incrustata** Murrill, Mycologia **3**: 191. 1911.

Pileus turbinate, with conic umbo, solitary, 2 cm. broad, nearly 1 cm. high; surface smooth, glabrous, dry, pallid with a rosy tint, light-bay on the umbo, becoming incrusted on drying with a white, powdery substance readily soluble in water; margin thin, straight, concolorous: lamellae decurrent, few in number, dull-white: spores ovoid, smooth, hyaline, 8–10 × 5–7 μ: stipe curved, cylindric, subequal, glabrous, white, 4 cm. long, 4 mm. thick.

TYPE LOCALITY: Chester Vale, Jamaica.
HABITAT: In rich soil on a wet bank.
DISTRIBUTION: Known only from the type locality.

88. **Clitocybe testaceoflava** Murrill, Mycologia **3**: 191. 1911.

Pileus obconic in outline, deeply umbilicate, irregularly oval in cross section, solitary, 3–5 cm. broad; surface dry, distinctly tomentose, dilute-testaceous, margin irregularly undulate, incurved, concolorous: lamellae decurrent, rather distant, stramineous, the edges undulate: spores ellipsoid, smooth, slightly yellowish, 4–5 × 3 μ: stipe cylindric, subequal, curved, slightly paler than the surface of the pileus, white near the base, 3–4 cm. long, 3 mm. thick.

TYPE LOCALITY: Cinchona, Jamaica.
HABITAT: Under low bushes on a bank.
DISTRIBUTION: Known only from the type locality.

DOUBTFUL AND EXCLUDED SPECIES

Agaricus (*Clitocybe*) *patuloides* Peck, Ann. Rep. N. Y. State Mus. **32**: 25. 1880. Not distinct from *Melanoleuca albissima.*

Clitocybe angustissima (Lasch) Gill. Champ. Fr. 168. 1874. (*Agaricus angustissimus* Lasch, Linnaea **4**: 528. 1829.) Reported by Peck as rare in New York.

Clitocybe caespitosa Peck, Ann. Rep. N. Y. State Mus. **41**: 61. 1888. Described from the Catskill Mountains, New York, and found afterwards in the Adirondacks. It is a rare species, occurring in clusters in woods, and is remarkable for its irregular and deformed appearance. Specimens at Albany collected in Michigan by Beal resemble a young, subclustered stage of *C. adirondackensis,* and it seems probable that further studies may connect the two species.

Clitocybe candida Bres. Fungi Trid. **1**: 16. 1882. Reported from New York but doubtless confused with *C. robusta* Peck.

Clitocybe cerussata (Fries) Quél. Champ. Jura Vosg. 49. 1872. (*Agaricus cerussatus* Fries, Syst. Myc. **1**: 92. 1821.) Reported by Peck as occurring rarely in the Adirondacks, as well as in certain other localities in America.

Clitocybe chrysocephala Sacc. Syll. Fung. **5**: 190. 1887. (*Agaricus* (*Clitocybe*) *auratocephalus* Ellis, Bull. Torrey Club **6**: 75. 1876.) Described from Newfield, New Jersey, occurring there in swampy ground in July. See *Camarophyllus auratocephalus.*

Clitocybe columbana (Mont.) Sacc. Syll. Fung. **5**: 142. 1887. (*Agaricus* (*Clitocybe*) *columbanus* Mont. Syll. Crypt. 102. 1856.) Described from specimens collected on naked ground at Columbus, Ohio. The types at Paris are large, closely clustered, and have the appearance of *Monadelphus illudens,* but the spores are ellipsoid, 7 × 4 μ. The color of the plant when fresh is not stated in the description.

Clitocybe difformis (Schum.) Gill. Champ. Fr. 172. 1874. (*Agaricus difformis* Schum. Enum. Pl. Saell. **1**: 335. 1803.) Reported once from New York by Peck. It has usually been regarded as a form of *C. cerussata.*

Clitocybe ditopoda (Fries) Gill. Champ. Fr. 166. 1874. (*Agaricus ditopus* Fries, Syst. Myc. **1**: 171. 1821.) Reported by Peck as rare in New York.

Clitocybe ectypa (Fries) Gill. Champ. Fr. 172. 1874. (*Agaricus ectypus* Fries, Syst. Myc. **1**: 108. 1821.) Reported from Alabama by Atkinson.

Clitocybe ectypoides (Peck) Sacc. Syll. Fung. **5**: 169. 1887. (*Agaricus* (*Clitocybe*) *ectypoides* Peck, Ann. Rep. N. Y. State Mus. **24**: 61. 1872.) Described from Sandlake, New York, and occurring rather frequently on decaying wood in woods from Maine to Alabama and west to Wisconsin. Apparently not distinct from *Omphalina chrysophylla.*

Clitocybe elixa (Sow.) P. Karst. Bidr. Finl. Nat. Folk **32**: 69. 1879. (*Agaricus elixus* Sow. Engl. Fungi *pl. 172.* 1798.) Reported from Massachusetts and Rhode Island.

Clitocybe erubescens (Mont.) Sacc. Syll. Fung. **5**: 150. 1887. (*Agaricus* (*Clitocybe*) *erubescens* Mont. Syll. Crypt. 103. 1856. Not *A. erubescens* Fries, 1821.) Described from specimens collected on fallen logs at Columbus, Ohio, by Sullivant. The types at Paris, which are poorly preserved, suggest either a true *Clitocybe* or a species of *Camarophyllus,* near *C. fulvosus.* The stipe is thick; the lamellae narrow to broad and distant; and the pileus smooth, viscid, and 2.5 cm. broad in its present dried state. The spores are oblong-ellipsoid, somewhat fusiform, smooth, hyaline, 4–5 × 2–3 μ.

Clitocybe flaccida (Sow.) Quél. Champ. Jura Vosg. 329. 1873. (*Agaricus flaccidus* Sow. Engl. Fungi *pl. 185.* 1799. Not *A. flaccidus* Bull. 1788.) Described from England and reported as occurring in pine woods in Massachusetts and Maryland. A study of Sowerby's plate and of specimens at Kew, in connection with specimens collected at Paris, leads me to believe that this is none other than *C. inversa;* in which case its occurrence in this country is correctly reported.

Clitocybe fragrans (Sow.) Quél. Champ. Jura Vosg. 55. 1872. (*Agaricus fragrans* Sow. Engl. Fungi *pl. 10.* 1795.) Reported by Peck as rare in New York. Also reported from North Carolina and California.

Clitocybe gallinacea (Scop.) Gill. Champ. Fr. 150. 1874. (*Agaricus gallinaceus* Scop. Fl. Carn. ed. 2. **2**: 433. 1772.) Described from Carniola and reported once by Peck from the Adirondacks, New York, occurring in grassy or mossy places. Peck states that it has a decidedly acrid taste and strong odor and that its color is dingy-white.

Clitocybe geotropa (Bull.) Quél. Champ. Jura Vosg. 52. 1872. (*Agaricus geotropus* Bull. Herb. Fr. *pl. 573, f. 2.* hyponym; 1791; DC. Fl. Fr. **2**: 172. 1805.) Reported from Massachusetts, Wisconsin, and California.

Clitocybe Gerardiana (Peck) Sacc. Syll. Fung. **5**: 181. 1887. (*Agaricus* (*Clitocybe*) *Gerardianus* Peck, Bull. Buffalo Soc. Nat. Sci. **1**: 46. 1873.) Described from Sandlake, New York, occurring in sphagnous marshes. See *Omphalina Epichysium.*

Clitocybe gigantea (Sow.) Quél. Champ. Jura Vosg. 51. 1872. (*Agaricus giganteus* Sow. Engl. Fungi *pl. 244.* 1800.) Reported from Wisconsin by Dodge, who says it differs from *Clitocybe maxima* in having a much shorter and thicker stipe.

Clitocybe hirneola (Fries) Quél. Champ. Jura Vosg. 49. 1872. (*Agaricus hirneolus* Fries, Syst. Myc. **1**: 269. 1821.) Peck reports it once from New York.

Clitocybe Hoffmani (Peck) Sacc. Syll. Fung. **5**: 197. 1887. (*Agaricus* (*Clitocybe*) *Hoffmani* Peck, Ann. Rep. N. Y. State Mus. **24**: 60. 1872.) Known only from specimens collected on much decayed wood in woods at Greig, New York. Not distinct from *Omphalina chrysophylla.*

Clitocybe maxima (Gärtn., Meyer & Scherb.) Quél. Champ. Jura Vosg. 51. 1872. (*Agaricus maximus* Gärtn., Meyer & Scherb. Fl. Wett. **3**^{2}: 329. 1802.) I examined this species in the Hooker herbarium at Kew and elsewhere, but found no specimens from America and its occurrence here must be considered doubtful, although it has been reported from Minnesota, Massachusetts, California, and elsewhere. Peck says it is rare in the Adirondacks and Catskills, occurring in woods and grassy places, and that it is easily recognized by its large size. Dodge reports it from Wisconsin.

Clitocybe megalospora Clements, Bot. Surv. Neb. **4**: 18. 1896. This is a form of *Gymnopus radicatus.* See Mycologia **7**: 157. 1915.

Clitocybe morbifera Peck, Bull. Torrey Club **25**: 321. 1898. Described from specimens collected on grassy ground and lawns in Washington, D. C., by F. J. Braendle. The taste is reported as very disagreeable and persisting for a long time. In Bulletin 150, Peck reports specimens sent by Dr. Whetstone from Minneapolis, Minnesota, and by Dr. Fischer from Detroit, Michigan, and in both cases sickness was produced after the fungus had been eaten in quantity. Dr. Peck concludes that although *C. morbifera* is scarcely distinguishable morphologically from *C. sudorifica* the ill effects of the former are much more serious and uncomfortable than those of the latter species. Specimens of *C. dealbata* collected at Seattle were compared at Albany with specimens of *C. morbifera* collected by Dr. Whetstone in Minnesota in 1905, and found to agree in every particular.

Clitocybe opaca (With.) Gill. Champ. Fr. 164. 1874. (*Agaricus opacus* With. Brit. Pl. ed. 2. **3**: 307. 1792.) Reported from North Carolina by Curtis.

Clitocybe piceina Peck, Bull. Torrey Club **31**: 178. 1904. Not distinct from *Melanoleuca albissima.*

Clitocybe pileolaria (Bull.) Murrill, Mycologia **7**: 268. 1915. (*Agaricus pileolarius* Bull. Herb. Fr. *pl. 400.* 1788. *Agaricus nebularis* Batsch, Elench. Fung. Contin. **2**: 25. 1789. *Clitocybe nebularis* (Batsch) Quél. Champ. Jura Vosg. 48. 1872.) Originally described from France, occurring among dead leaves in woods, and very well figured by Bulliard, as well as by Barla, Bresadola, Fries, Hussey, Bolton, and others. Peck's figures in Report 48 are not suggestive of the European plant, and the spores of his specimens are 4–6 × 2–3 μ, while those of the European plant are 8–10 × 5–7 μ. The species has been reported from Canada to North Carolina and west to the Rocky Mountains, and there are many specimens so named at Albany, but apparently there remains much to be determined regarding its occurrence in this country.

Clitocybe piniaria (Bosc) Sacc. Syll. Fung. **5**: 148. 1887. (*Agaricus piniarius* Bosc, Ges. Nat. Freunde Berlin Mag. **5**: 84. 1811.) Described and known only from specimens collected in pine woods in South Carolina. Fries did not see these specimens.

Clitocybe porphyrella (Berk. & Curt.) Sacc. Syll. Fung. **5**: 196. 1887. (*Agaricus* (*Clitocybe*)

porphyrellus Berk. & Curt. Ann. Mag. Nat. Hist. III. **4**: 284. 1859.) Described from specimens collected in leaf-mold in Connecticut by Wright. The types at Kew are badly molded and unreliable for comparison. The pale-purple color of the entire hymenophore would seem to suggest *Prunulus purus* or one of the species of *Laccaria*.

Clitocybe pruinosa (Lasch) Quél. Champ. Jura Vosg. 216. 1872. (*Agaricus pruinosus* Lasch; Fries, Epicr. Myc. 75. 1838.) Reported from Ohio by Lea.

Clitocybe pruinosa Lovejoy, Bot. Gaz. **50**: 384. 1910. Not *Clitocybe pruinosa* (Lasch) Quél. 1872. Described from specimens collected in open pine woods at Foxpark, Wyoming, August 14, 1909. The pileus is described as 3.5 cm. wide, smooth, and rich-reddish-brown over salmon; the lamellae as salmon-yellow, crowded, and very decurrent; and the spores as globose, spiny, 7–10.5 μ. This would seem to indicate a species of *Laccaria* if the lamellae were not so decurrent. Its relationship may be with *C. sinopica*.

Clitocybe radiozonaria (Johnson) Sacc. Syll. Fung. **9**: 20. 1891. (*Agaricus* (*Clitocybe*) *radiozonarius* Johnson, Bull. Minn. Acad. Sci. **1**: 214. 1877.) Described from Minnesota, occurring on decaying fallen branches and stumps in June. The specimens are lost, but the description resembles that of *Crinipellis zonata*.

Clitocybe rancidula (Banning & Peck) Murrill, Mycologia **7**: 270. 1915. (*Tricholoma rancidulum* Banning & Peck; Peck, Ann. Rep. N. Y. State Mus. **44**: 179 (67). 1891.) Known only from specimens collected in vegetable mold in Druid Hill Park, Baltimore, Maryland, by Miss Banning. The lamellae are slightly decurrent and very narrow and crowded. The plant is larger than *Lepista personata*, the stipe is not bulbous, and the margin of the pileus is finely striate for about 2 cm. Its odor is very rancid, whence the name.

Clitocybe rivulosa (Pers.) Quél. Champ. Jura Vosg. 214. 1872. (*Agaricus rivulosus* Pers. Syn. Fung. 369. 1801.) Described from Europe and twice reported by Peck from the Adirondacks. It was also reported from the Antilles by Fries in 1851.

Clitocybe setiseda (Schw.) Sacc. Syll. Fung. **5**: 176. 1887. (*Agaricus* (*Omphalia*) *setisedus* Schw. Schr. Nat. Ges. Leipzig **1**: 88. 1822.) Described from North Carolina, occurring among fallen leaves. I have seen no specimens.

Clitocybe socialis (Fries) Sacc. Syll. Fung. **5**: 149. 1887. (*Agaricus socialis* Fries, Hymen. Eur. 83. 1874.) Reported by Moffatt as occurring among dead leaves on a wooded hillside in the vicinity of Chicago, Illinois. He says that it is remarkable for its very acute umbo, and that the spores are globose, echinulate, 9–10 μ. I have not seen his specimens.

Clitocybe splendens (Pers.) Gill. Champ. Fr. 139. 1874. (*Agaricus splendens* Pers. Syn. Fung. 452. 1801.) Described from Europe and reported by Peck as rare among fallen leaves in woods in the Adirondacks. It is very probable that American specimens bearing this name may all be referred to *C. sinopica*, *C. subsquamata*, or *C. inversa*.

Clitocybe subinvoluta (Batsch) Sacc. Syll. Fung. **5**: 170. 1887. (*Agaricus subinvolutus* Batsch, Elench. Fung. Contin. **2**: 57. 1789.) Reported from Massachusetts by Frost and from New York by Peck.

Clitocybe subsimilis Peck, Ann. Rep. N. Y. State Mus. **41**: 61. 1888. Described from specimens collected under pine trees in the Catskill Mountains, New York. After examining the excellent type specimens at Albany, I have referred the species to *Melanoleuca albissima* (Peck) Murrill.

Clitocybe subsocialis Peck, Bull. Torrey Club **23**: 411. 1896. Described from specimens collected by Yeomans on grassy ground at Camas, Washington, in December. Peck remarks that it is closely related to *C. socialis*, but differs in its strong odor, squamulose pileus, and white lamellae. The types at Albany very much resemble *C. sinopica*, but Peck says they differ from this species in their squamulose surface, although resembling it in color.

Clitocybe sudorifica Peck, Bull. N. Y. State Mus. 157: 67. 1912. (*Clitocybe dealbata sudorifica* Peck, Bull. N. Y. State Mus. 150: 43. 1911.) First described as a variety of *C. dealbata* from specimens collected in grassy ground at Saratoga, New York, by F. G. Howland. It has been collected in two or three other localities in Albany and Ontario Counties. Mr. Howland, Dr. Peck, and Dr. Ford all agreed that this mushroom was decidedly sudorific and unwholesome, differing decidedly in this respect from the reputation enjoyed by *C. dealbata*. I have examined the types, however, and can see no morphologic difference between the two

plants. They both grow gregariously in exposed grassy places and the best observer could not tell them apart.

Clitocybe sulphurea Peck, Ann. Rep. N. Y. State Mus. **41**: 62. 1888. Described and known only from specimens collected on decaying wood of spruce and balsam fir on Wittenberg Mountain in the Catskills, New York. There are five rather young specimens on the type sheet at Albany. They appear to be related to *Cortinellus decorus,* but the surface is not squamulose.

Clitocybe tarda Peck, Bull. Torrey Club **24**: 140. 1897. The spores of this species are rose-colored instead of hyaline. *Agaricus tardus* Schw. is probably not distinct from *Clitocybe concava.*

Clitocybe tuba (Fries) Gill. Champ. Fr. 137. 1874. (*Agaricus tuba* Fries, Epicr. Myc. 72. 1838.) Reported by Peck as rare in New York, but his specimens are quite different from European ones.

Clitocybe tumulosa (Kalchbr.) Sacc. Syll. Fung. **5**: 162. 1887. (*Agaricus tumulosus* Kalchbr. Ic. Hymen. Hung. 13. 1873. Reported from New York once by Peck.

Collybia aquosa adnatifolia Bull. N. Y. State Mus. **1**[2]: 25. 1888. Peck states in his 49th report that this variety is probably a *Clitocybe.*

Tricholoma cellare Banning & Peck; Peck, Ann. Rep. N. Y. State Mus. **44**: 179 (67). 1891. This name was published by Peck without description or comment, although Miss Banning's manuscript drawing and notes are quite complete. The lamellae being decurrent, the plant is a *Clitocybe,* or, if it grows on wood, a *Monadelphus.*

Tricholoma Sienna (Peck) Sacc. Syll. Fung. **5**: 137. 1887. (*Agaricus* (*Tricholoma*) *Sienna* Peck, Ann. Rep. N. Y. State Mus. **24**: 60. 1872.) Described from specimens collected on the ground in woods at Greig, New York, and apparently not reported since. A good drawing accompanies the types at Albany, and there is little doubt that this species is only a rather large form of *Clitocybe sinopica.*

41. **MONADELPHUS** Earle, Bull. N. Y. Bot. Gard. **5**: 432. 1909.

Pileus fleshy, putrescent, densely cespitose and wood-loving, attached to decayed trunks or roots: lamellae decurrent, rarely adnate: spores hyaline: stipe central or nearly so, fleshy or fleshy-tough: veil none.

Type species, *Agaricus illudens* Schw.

Pileus white or whitish.	1. *M. revolutus.*
Pileus usually honey-yellow, squamulose on the disk.	2. *M. caespitosus.*
Pileus saffron-yellow or orange-yellow, glabrous.	
Spores 4–5 μ in diamater; species confined to the eastern United States.	3. *M. illudens.*
Spores 10–12 μ in diameter; species confined to the Pacific coast.	4. *M. sphaerosporus.*
Pileus bay-red or somewhat darker.	5. *M. marginatus.*

1. **Monadelphus revolutus** (Peck) Murrill, Mycologia **7**: 282. 1915.

Clitocybe revoluta Peck, Ann. Rep. N. Y. State Mus. **46**: 103 (23). 1893.

Pileus convex or nearly plane, often irregular, densely cespitose, occasionally solitary, 2.5–7 cm. broad; surface glabrous, whitish and slightly striatulate on the margin when moist, white when dry, margin thin, commonly and irregularly revolute: lamellae thin, narrow, crowded, adnate or slightly decurrent: spores subglobose, 4–5 μ: stipe glabrous, solid when young, stuffed or somewhat hollow when old, whitish, 5–7 cm. long, 6–12 mm. thick.

TYPE LOCALITY: Alcove, Albany County, New York.
HABITAT: On buried wood in woods.
DISTRIBUTION: Known only from the type locality.
EXSICCATI: Shear, N. Y. Fungi *103.*

2. **Monadelphus caespitosus** (Berk.) Murrill, Mycologia **3**: 192. 1911

Lentinus caespitosus Berk. Lond. Jour. Bot. **6**: 317. 1847.
Agaricus (*Pleurotus*) *caespitosus* Berk. & Curt. Jour. Linn. Soc. **10**: 287. 1868.

Agaricus monadelphus Morgan, Jour. Cinc. Soc. Nat. Hist. 6: 69. 1883.
Clitocybe monadelpha Sacc. Syll. Fung. 5: 164. 1887.
Pleurotus caespitosus Sacc. Syll. Fung. 5: 352. 1887.
Clitocybe aquatica Banning & Peck; Peck, Ann. Rep. N. Y. State Mus. 44: 180 (68). 1891.
Armillaria mellea exannulata Peck, Ann. Rep. N. Y. State Mus. 46: 134 (54). 1893.
?*Clitocybe parasitica* Wilcox, Bull. Okla. Exp. Sta. 49: 18. 1901.

Pileus fleshy, convex, sometimes becoming centrally depressed, cespitose, 2.5–7 cm. broad; surface squamulose at the center, pale-brown, reddish-brown, or honey-colored; lamellae rather crowded, distinctly decurrent, pallid or pale-flesh-colored: spores broadly ovoid or slightly irregular, smooth, hyaline, 7–9 × 5–6 μ: stipe long, flexuous, fibrous, solid, often becoming hollow with age and twisted and tapering at the base, brown, pale-brown, or tinged with flesh-color, 6–10 cm. long, 4–6 mm. thick.

TYPE LOCALITY: Ohio.
HABITAT: Woods and open places.
DISTRIBUTION: New York to Kansas and South to Alabama and British Honduras.
ILLUSTRATIONS: Ann. Rep. N. Y. State Mus. **51**: *pl. 51, f. 1–5;* McIlv. Am. Fungi *pl. 27;* Jour. Cinc. Soc. Nat. Hist. **6**: *pl. 4.*

3. **Monadelphus illudens** (Schw.) Earle, Bull. N. Y. Bot. Gard. **5**: 432. 1909.

?*Agaricus olearius* DC. Fl. Fr. **6**: 44. 1815.
Agaricus illudens Schw. Schr. Nat. Ges. Leipzig **1**: 81. 1822.
Agaricus (*Pleurotus*) *facifer* Berk. & Curt. Ann. Mag. Nat. Hist. II. **12**: 421. 1853.
Clitocybe illudens Sacc. Syll. Fung. **5**: 162. 1887.

Pileus convex or nearly plane, sometimes centrally depressed, obtuse or umbonate, cespitose, 7–12 cm. broad; surface glabrous or obscurely virgate, saffron-yellow or orange-yellow, margin often irregular: context white or yellowish, the odor strong, the taste disagreeable, poisonous; lamellae crowded, decurrent, narrowed toward each end, concolorous, phosphorescent: spores globose, 4–5 μ: stipe long, firm, glabrous, solid, stuffed or rarely hollow, often attenuate toward the base, sometimes eccentric, concolorous or sometimes brownish toward the base, 7–14 cm. long, 6–12 mm. thick.

TYPE LOCALITY: North Carolina.
HABITAT: About stumps and dying trunks of deciduous and rarely coniferous trees.
DISTRIBUTION: Eastern United States and west to Kansas and Texas.
ILLUSTRATIONS: Ann. Rep. N. Y. State Mus. **49**: *pl. 49;* Bull. Conn. Geol. Nat. Hist. Surv. **3**: *pl. 19;* McIlv. Am. Fungi *pl. 29a*; Murrill, Ed. Pois. Mushr. *f. 33.*

4. **Monadelphus sphaerosporus** (Peck) Murrill, Mycologia **7**: 282. 1915.

Clitocybe sphaerospora Peck, Bull. Torrey Club **36**: 331. 1909.

Pileus fleshy, nearly plane, centrally depressed when old, 5.5–7 cm. broad; surface opaque, glabrous, brick-red, darker at the center: context tough, white, without distinct taste or odor; lamellae subdistant, narrowed toward each end, decurrent, white, the interspaces somewhat venose: spores globose, 10–12 μ: stipe equal, slightly radicate, solid, white, 5–6.5 cm. long, 1.5–2 cm. thick.

TYPE LOCALITY: Claremont, California.
HABITAT: Under oaks.
DISTRIBUTION: California.

5. **Monadelphus marginatus** (Peck) Murrill, Mycologia **7**: 282. 1915.

Clitocybe marginata Peck; V. S. White, Bull. Torrey Club **29**: 558. 1902.

Pileus fleshy, rather thick, subcampanulate, becoming convex, obtuse or broadly umbonate, cespitose, 5–8 cm. broad; surface glabrous or nearly so, dry, bay-red verging to mahogany-color, margin at first involute: context yellow; lamellae narrow, crowded, decurrent, yellowish, reddish on the edges: spores subglobose, 5 × 4–5 μ: stipe nearly equal, stout, hollow, glabrous, shining, yellowish marked with reddish longitudinal lines, 5–8 cm. long, 6–12 mm. thick.

TYPE LOCALITY: Bar Harbor, Mt. Desert, Maine.
HABITAT: Around decaying stumps.
DISTRIBUTION: Known only from the type locality.

CORRECTIONS

Self-evident errors, and such as may readily be discovered by reference to the bibliography or index, are not listed here.

Page

23. **Coriolus Lloydii.**
    The type was collected, not in Ohio, but at Mammoth Cave, Kentucky.
26. **Coriolus biformis.**
    The authority for the last three synonyms should appear as: Berk. & Curt.
    In the exsiccati, for "Myc. Mar." read "Myc. Univ."
31. **Tyromyces palustris.**
    The synonym should be: *Polyporus palustris* Berk. & Curt. Jour. Bot. & Kew Misc. **1**: 102. 1849.
38. **Spongipellis unicolor.**
    Under the exsiccati, the first citation should be: Ellis, N. Am. Fungi *309*.
39. **Spongipellis fissilis.**
    The synonym should be: *Polyporus fissilis* Berk. & Curt. Jour. Bot. & Kew Misc. **1**: 234. 1849.
40. **Bjerkandera adusta.**
    The third synonym should be: *Boletus suberosus flabelliformis* Batsch, Elench. Fung. Contin. **2**: 117. *f. 226*. 1789.
41. **Bjerkandera fumosa.**
    The last synonym should be: ?*Polyporus salignus* Fries, Epicr. Myc. 452. 1838.
42. **Trametes.**
    Insert the synonym: *Cubamyces* Murrill, Bull. Torrey Club **32**: 480. 1905.
43. **Trametes suaveolens.**
    Under illustrations, for " Ill. Brit. Myc. *pl. 43* " read " Ill. Brit. Myc. **1**: *pl. 43*."
45. **Earliella corrugata.**
    The fifth synonym should be: ?*Trametes bicolor* Berk. Jour. Linn. Soc. **16**: 43. 1877.
47. **Porodisculus pendulus.**
    The second synonym should be: *Sphaeria pocula* Schw. Trans. Am. Phil. Soc. II. **4**: 189. 1832.
    The third synonym should be: *Polyporus cupulaeformis* Berk. & Curt. Jour. Bot. & Kew Misc. **1**: 103. 1849.
49. **Hexagona daedalea.**
    The first synonym should be: *Merulius daedaleus* Link, Ges. Nat. Freunde Berlin Mag. **3**: 37. 1809.
58. **Polyporus columbiensis.**
    Under both type locality and distribution, for "South Carolina" read "Oregon."
64. **Scutiger Ellisii.**
    The first synonym should be: *Polyporus Ellisii* Berk.; Cooke & Ellis, Grevillea **7**: 4. 1878.
70. **Pycnoporellus fibrillosus.**
    The first synonym should read " *Polyporus aurantiacus* Peck" instead of " *Polyporus fibrillosus* Peck," and the following synonym should be inserted just above it: *Polyporus fibrillosus* P. Karst. Sydv. Finl. Polyp. 30. 1859.
75. **Coriolopsis occidentalis.**
    The second synonym should be: ?*Polyporus myrrhinus* Kickx, Bull. Acad. Brux. **5**: 371. 1838.

79. **Trichaptum trichomallum** (not **trichmoallum**).

The first synonym should be: ?*Trametes Perrottetii* Lév. Ann. Sci. Nat. III. **2**: 195. 1844.

80. **Hapalopilus rutilans.**

The first synonym should be: *Boletus suberosus* Bull. Hist. Champ. Fr. 354. 1791. Not *B. suberosus* L. 1753.

81. **Hapalopilus gilvus.**

In the second synonym the volume-number "**1**:" should be inserted; in the eighth synonym the page-number should be "17" instead of "7;" and in the last synonym the page-number should be "89" instead of "72."

82. **Ischnoderma fuliginosum.**

The illustration cited should be "*pl. 183, f. 2,*" not "*pl. 483, f. 2.*"

83. **Favolus tenuis.**

The fifth synonym should be: *Hexagona orbiculata* Fries, Epicr. Myc. 497. 1838.

To the illustration cited should be added: Afzel. Reliq. *pl. 4, f. 9.*

84. **Pogonomyces hydnoides.**

The last synonym should be: *Polyporus Feathermanni* Rav.; Cooke, Grevillea **6**: 130. 1878.

90. **Phaeolus sistotremoides.**

Insert, at the end of the synonymy, this synonym: *Romellia sistotremoides* Murrill, Bull. Torrey Club **31**: 339. 1904.

93. **Coltricia tomentosa.**

Omit the last synonym; no such binomial appears at the place cited, and it does not seem to have been used elsewhere.

95. **Fomes roseus.**

The third synonym should be: *Polyporus carneus* Blume; Blume & T. Nees, Nova Acta Acad. Leop.-Carol. **13**[1]: 14. *pl. 3.* 1826.

Under exsiccati, the second citation should be: Rav. Fungi Car. **5**: *14.*

97. **Fomes annosus.**

The third synonym should be: *Polyporus subpileatus* Weinm. Syll. Pl. Nov. **2**: 102. 1827.

The fourth synonym should be: *Polyporus resinosus* Rostk. in Sturm, Deuts. Fl. Pilze **4**: 61. 1830.

98. **Fomes Ellisianus.**

Omit the reference to exsiccati; the citation is merely to a distribution-number.

99. **Fomes populinus.**

The third synonym should be: *Polyporus connatus* Weinm. Syll. Pl. Nov. **2**: 102. 1827.

108. **Pyropolyporus Baccharidis.**

The synonym should be: *Polyporus Baccharidis* Pat.; Pat. & Lagerh. Bull. Soc. Myc. Fr. **9**: 129. 1893.

112. **Nigrofomes melanoporus.**

The second synonym should be: *Polyporus melanoporoides* Cesati, Atti Accad. Sci. Napoli **8**[3]: 6. 1879.

120. **Ganoderma Curtisii.**

The synonym should be: *Polyporus Curtisii* Berk.; Berk. & Curt. Jour. Bot. & Kew Misc. **1**: 101. 1849.

Under exsiccati, for *47* read *417.*

124. **Cerrena unicolor.**

Under exsiccati, the last citation should be: Rav. Fungi Car. **3**: *14.*

126. **Daedalea confragosa.**

Under exsiccati, instead of "Rav. Fungi Car. *15*" read "Rav. Fungi Car. **2**: *15.*"

128. **Lenzites betulina.**

Under exsiccati, the second citation should be: Rav. Fungi Car. **2**: *14.*

130. **Gloeophyllum hirsutum.**

Under exsiccati, the last citation should be: Rav. Fungi Car. **1**: *7.*

130. **Gloeophyllum Berkeleyi.**

The first synonym should be: *Daedalea rhabarbarina* Berk. & Cooke; Cooke, Grevillea **6**: 130. 1878. Not *D. rhabarbarina* Mont. 1840.

151. **Suillellus luridus.**

The first synonym should be: *Boletus luridus* Schaeff. Fung. Bavar. **4**: Ind. 78. 1774.

166. **ASTEROPHORA.**

The citation should be: Ditmar; Link, Neues Jour. Bot. Schrad. **3**[1]: 17. 1809.

The type species should be stated as: *Agaricus lycoperdoides* Pers.

166. **Asterophora clavus.**

The third synonym should be: *Asterophora lycoperdoides* Ditmar, in Sturm, Deuts. Fl. Pilze **1**: 53. 1814.

This synonym should be inserted: *Agaricus lycoperdoides* Pers. Neues Mag. Bot. **1**: 100. 1794.

179. **Lactaria torminosa.**

Among the illustrations, for "Lucand, Champ. Fr." read "Cooke, Brit. Fungi."

179. **Lactaria scrobiculata.**

Among the illustrations, omit the citation to Lucand; it is an erroneous repetition of the Cooke reference.

181. **Lactaria circellata.**

Omit the synonym.

195. **Lactaria Gerardii.**

Of the two illustrations cited, omit the first.

203. No. 55 in the key.

For *R. tenuipes* read *R. tenuiceps.*

208. **Russula lepida.**

The citation should be: Fries, Anteckn. Sv. Aetl. Svamp. 50. 1836.

210. **Russula virescens.**

Under illustrations, for "Ill. Brit. Myc. *pl. 11*" read "Ill. Brit. Myc. **2**: *pl. 11.*"

219. **Russula tenuipes.**

For **tenuipes** read **tenuiceps.**

226. **Russula flava.**

The citation should be: Lönnegren, Nord. Svampb. ed. 2. 27. 1895.

229. **Russula melliolens.**

The first illustration should be "**30**[2]: *pl. 3, f. 6*" instead of "**26**[2]: *pl. 3, f. 630.*"

276. **Marasmius vialis.**

Insert the synonym: *Heliomyces vialis* Morgan, Jour. Myc. **12**: 94. 1906.

284. *Marasmius albomarginatus.*

The citation should be: Clements, Bot. Surv. Nebr. **4**: 20. 1896.

285. *Marasmius papillosus.*

The citation should be: Clements, Bot. Surv. Nebr. **4**: 21. 1896.

300. **Geopetalum angustatum.**

The first synonym should be: *Panus angustatus* Berk. Lond. Jour. Bot. **6**: 318. 1847.

307. **MICROMPHALE.**

Insert the synonym: *Agaricus* § *Micromphale* Nees, Syst. Pilze Schw. 203. 1817.

309. **LEPTOMYCES.**

Omit the second synonym, and reduce the name *Leptomyces* to synonymy; the correct name of this genus is: **HIATULA** (Fries) Berk. Ann. Mag. Nat. Hist. II. **9**: 193. 1852. The type species is *Agaricus discretus* Fries, and the 5 species described on pages 309 and 310 should be corrected as follows:

1. **Hiatula discreta** (Fries) Sacc. Syll. Fung. **5**: 307. 1887.
2. **Hiatula minima** Berk. Ann. Mag. Nat. Hist. II. **9**: 193. 1852.
3. **Hiatula ciliatula** (Fries) Sacc. Syll. Fung. **5**: 306. 1887.
4. **Hiatula purpurascens** Berk. & Curt. Jour. Linn. Soc. **10**: 293. 1868.
5. **Hiatula Benzonii** (Fries) Sacc. Syll. Fung. **5**: 305. 1887.

317. *Delicatula microscopica.*

This combination, *D. microscopica* (Wirtgen) Fayod, seems to have been made here for the first time; at any event, Fayod did not make it, except by implication, at the place cited.

358. **Gymnopus carnosus.**

The first synonym should be: *Agaricus carnosus* Curt. Fl. Lond. 5: *pl. 71.* 1785.

361. **Gymnopus velutipes.**

The first synonym should be: *Agaricus velutipes* Curt. Fl. Lond. 4: *pl. 70.* 1782.

361. **Gymnopus tenuipes.**

The citation for the last synonym should be "Anal. Soc. Ci. Argent. **16**:" instead of "Fungi Guar. Pug. **16**."

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2901–3000.	1 D 1909.	*3701–3800.*	30 O 1912.	*4501–4600.*	20 F 1915.

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Elench. Fung. 1–183. *pl. 1–12.* 1783.
Elench. Fung. Contin. **1**: 1–279. *pl. 13–30.* 1786.
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Beck von Mannagetta und Lerchenau, Günther, 1856– ; Zahlbruckner, Alexander, 1860– (Beck & Zahlbr.).

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101–200.	1896.	*301–400.*	1899.

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Grevillea **1**: 33–39. S 1872.—Notices of North American fungi.
Grevillea **1**: 49–55. O 1872.—Notices of North American fungi. (Continued.)
Grevillea **1**: 65–71. N 1872.—Notices of North American fungi. (Continued.)
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1: 1–68. *pl. 1–44.* 1795.
2: 1–72. *pl. 45–92.* 1797.
3: 1–80. *pl. 93–138.* 1799.
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1: 1–12.	1904.	2: 5–20.	1906.	4: 1–29.	1907.
1: 13–19.	1905.	3: 1–8.	1906.	5: 1–28.	1908.
2: 1–4.	1905.	3: 9–26.	1907.	6: 1–24.	1909.

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Brefeld, Oscar, 1839– (Bref.).

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1: 1–64. *pl. 1–6.*	1872.	**8**: 1–305. *pl. 1–12.*	"1889" [N 1888].
2: 1–98. *pl. 1–8.*	1874.	**9**: 1–156. *pl. 1–3a, 3b.*	1891.
3: 1–226. *pl. 1–11.*	1877.	**10**: 1–378. *pl. 4–13.*	1891.
4: 1–191. *pl. 1–10.*	1881.	**11**: 1–98. *pl. 1–5.*	1895.
5: 1–220. *pl. 1–13.*	1883.	**12**: 1–236. *pl. 6–12.*	1895.
6: 1–78. *pl. 1–5.*	1884.	**13**: 1–75. *pl. 1, 2.*	1905.
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Bresadola, Giacomo, 1847– (Bres.).

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1: 15–26. *pl. 16–30.*	1882.	**2**: 1–46. *pl. 106–150.*	1892.
1: 27–42. *pl. 31–45.*	1883.	**2**: 47–81. *pl. 151–195.*	1898.
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1–25.	1888.	*151–200.*	1892.	*276–300.*	1897.
26–100.	1889.	*201–225.*	1893.	*301–350.*	1900.
101–125.	1890.	*226–250.*	1894.	*351–400.*	1905.
126–150.	1 91.	*251–275.*	1896.	*401–425.*	1909.

Britzelmayr, Max, 1839–1909 (Britz.).

Ber. Nat. Ver. Augsburg **28**: 119–160. 1885.—Hymenomyceten aus Südbayern.

Hymen. Südb. 1879–97.—Hymenomyceten aus Südbayern.

This work, comprising hundreds of unnumbered plates, with thousands of figures numbered in about twenty series, according to the genus or group to which each plant was referred, appeared under various titles, in parts, during 17 years. It is the despair of the mycologist who wishes to cite it, or to verify a citation to it. In this volume it has been cited only under Lactaria, Russula, and Marasmius.

pl. 1–10.	1879.
Lact. *f. 1–81.*	1886–97.—Lactarius.
Marasm. *f. 1–54.*	1886–97.—Marasmius.
Russ. *f. 1–138.*	1886–97.—Russula.

Brotero, Felix de Avellar, 1744–1828 (Brot.).

Fl. Lusit. **1**: 1–607. **2**: 1–557. 1804.—Flora lusitanica.

Brown, Robert, 1773–1858 (R. Br.).

Browne, Patrick, 1720–1790 (P. Br.).

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Herb. Fr. *pl. 1–600.* 1780–93.—Herbier de la France.

pl. 1–48.	1780.	*pl. 241–288.*	1785.	*pl. 481–528.*	1790.
pl. 49–96.	1781.	*pl. 289–336.*	1786.	*pl. 529–576.*	1791.
pl. 97–144.	1782.	*pl. 337–384.*	1787.	*pl. 577–600.*	1793?
pl. 145–192.	1783.	*pl. 385–432.*	1788.	[*pl. 601, 602.*]	1840.
pl. 193–240.	1784.	*pl. 433–480.*	1789.		

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1–368.	1791.	369–540.	1809.	541–700.	1812.

Bundy, William F. (Bundy).

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Burlingham, Gertrude Simmons, 1872– (Burl.).

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Candolle, Augustin Pyramus de, 1778–1841 (DC.).

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1: 1–388. *pl. 1–11.* 1805. **4**: 1–944. 1805. (forming 2 vols., paged consecutively).
2: 1–600. 1805. **6**: 1–662. 1815.
3: 1–731. 1805.

Cavara, Fridiano, 1857– (Cavara).

Fungi Longob. *1–250.* 1891–95.—Fungi Longobardiae exsiccati.

1–50.	1891.	*101–150.*	1893.	*201–250.*	1895.
51–100.	1892.	*151–200.*	1894.		

Cesalpino, Andrea, 1519–1603 (Cesalp.).

Cesati, Vincenzo, 1806–1883 (Ces.).

Atti Accad. Sci. Napoli 8^3: 1–28. *pl. 1–4.* 18 Au 1879.—Mycetum in itinere borneensi lectorum a cl. Od. Beccari enumeratio.

Clements, Frederic Edward, 1874– (Clements).

Bot. Surv. Neb. **2**: 38. 15 Ap 1893.—Mycena acuto-conica.

Bot. Surv. Neb. **4**: 5–23. 20 Ja 1896.—New species of fungi.

Crypt. Form. Colo. *1–600*. 1906–08.—Cryptogamae formationum coloradensium.

1–200. 1906. *201–400*. 1907. *401–600*. 1908.

Cohn, Ferdinand Julius, 1828–1898; Schroeter, Joseph, 1837–1894 (Cohn & Schroet.).

Abh. Nat. Ver. Hamb. **11**[2]: 1–16. *pl.* 1891.—Untersuchungen über Pachyma und Mylitta.

Cooke, Mordecai Cubitt, 1825–1914 (Cooke).

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1–100.	1865.	*201–300*.	1867.	*401–600*.	1872.
101–200.	1866.	*301–400*.	1870.	*601–700*.	1874.

Grevillea **6**: 129–146. Je 1878.—Ravenel's American fungi.

Grevillea **7**: 1–4. S 1878.—Californian fungi.

Grevillea **10**: 41–52. D 1881.—New British fungi. (Continued.)

Grevillea **10**: 147–152. Je 1882.—New British fungi. (Continued.)

Grevillea **11**: 106–111. Mr 1883.—North American fungi.

Grevillea **12**: 8–21. S 1883.—Australian fungi. (Concluded.)

Grevillea **12**: 22–33. S 1883.—New American fungi.

Grevillea **12**: 37–39. S 1883.—Some exotic fungi.

Grevillea **13**: 1–4. S 1884.—Fungi of Perak.

Grevillea **13**: 32, 33. D 1884.—Demerara fungi.

Grevillea **13**: 114–119. Je 1885.—Praecursores ad monographiam Polypororum. (Continued.)

Grevillea **14**: 17–21. S 1885.—Praecursores ad monographiam Polypororum. (Continued.)

Grevillea **14**: 77–87. Mr 1886.—Praecursores ad monographiam Polypororum. (Continued.)

Grevillea **15**: 19–27. S 1886.—Praecursores ad monographiam Polypororum. (Continued.)

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Grevillea **19**: 98–103. Je 1891.—Trametes and its allies.

Handb. Brit. Fungi ed. 2. 1–398. 1883[–91].—Handbook of British fungi. Second and revised edition.

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1–16.	1883.	113–176.	1886.	289–344.	1889.
17–80.	1884.	177–224.	1887.	345–384.	1890.
81–112.	1885.	225–288.	1888.	385–398.	1891.

Trans. Bot. Soc. Edinb. **13**: 131–159. 1878.—Enumeration of Polyporus.

Cooke, Mordecai Cubitt, 1825–1914; Ellis, Job Bicknell, 1829–1905 (Cooke & Ellis).

Grevillea **7**: 4–10. S 1878.—New Jersey fungi. (Continued.)

Cooke, Mordecai Cubitt, 1825–1914; Harkness, Harvey Willson, 1821–1901 (Cooke & Hark.).

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Copeland, Edwin Bingham, 1873– (Copeland).

Ann. Myc. **2**: 507–510. *pl. 12*. 10 D 1904.—New or interesting California fungi II.

Cordier, François Simon, 1797–1874 (Cordier).

Champ. Fr. **1**: 1–231. **2**: 1–274. *pl. 1–60*. 1870.—Les champignons de la France.

Cragin, Francis Whittemore, 1858– (Cragin).

Bull. Washburn Lab. Nat. Hist. **1**: 19–28. S 1884.—First contribution to the catalogue of the Hymenomycetes and Gasteromycetes of Kansas.

Crossland, Charles (Crossl.).

Naturalist **1900**: 5–10. 3 Ja 1900.—New and critical British fungi found in West Yorkshire.

Curtis, Moses Ashley, 1808–1872 (M. A. Curt.).

Am. Jour. Sci. II. **6**: 349–353. N 1848.—Contributions to the mycology of North America.

Curtis, William, 1746–1799 (Curt.).

Fl. Lond. 1775–98.—Flora londinensis.

This work consisted of 432 plates (each with accompanying text), issued in 72 numbers of 6 plates each. Twelve numbers constituted a "fascicle," and upon the completion of each fascicle a table of contents was issued assigning new numbers to each plate. Three fascicles constituted a volume, and each of the two volumes has a table of contents in which the plates are again assigned new numbers.

The approximate dates of the "fascicles" were:

1: *pl. 1–72.*	1775–77.	4: *pl. 1–72.*	1781–83.
2: *pl. 1–72.*	1777–79.	5: *pl. 1–72.*	1783–88.
3: *pl. 1–72.*	1779–81.	6: *pl. 1–72.*	1790–98.

DC.: see **Candolle.**

Desmazières, Jean Baptiste Henri Joseph, 1786–1862 (Desmaz.).

Pl. Crypt. *1–2200.* 1825–51.—Plantes cryptogames de France.

Nos. *1–800* issued under the title "Plantes cryptogames du nord de la France."

1–50.	1825.	*651–750.*	1834.	*1251–1350.*	1843.
51–150.	1826.	*751–850.*	1836.	*1351–1450.*	1845.
151–250.	1827.	*851–900.*	1837.	*1451–1550.*	1846.
251–350.	1828.	*901–950.*	1838.	*1551–1650.*	1847.
351–450.	1829.	*951–1050.*	1839.	*1651–1750.*	1848.
451–500.	1830.	*1051–1100.*	1840.	*1751–1950.*	1849.
501–550.	1831.	*1101–1150.*	1841.	*1951–2100.*	1850.
551–600.	1832.	*1151–1250.*	1842.	*2101–2200.*	1851.
601–650.	1833.				

Dickson, James, 1738–1822 (Dicks.).

Pl. Crypt. Brit. 1785–1801.—Fasciculi plantarum cryptogamicarum Britanniae.

1: 1–28. *pl. 1–3.*	1785.	**3**: 1–24. *pl. 7–9.*	1793.
2: 1–31. *pl. 4–6.*	1790.	**4**: 1–28. *pl. 10–12.*	1801.

Dillenius, John James, 1684–1747 (Dill.).

Ditmar, L. P. Fr. (Ditmar).

In Sturm, Deuts. Fl. Pilze **1**: 1–130. *pl. 1–64.* 1813–17.—Die Pilze Deutschlands.

1: 1–34. *pl. 1–16.*	1813.	**1**: 67– 98. *pl. 33–48.*	1816.
1: 35–66. *pl. 17–32.*	1814.	**1**: 99–130. *pl. 49–64.*	1817.

Neues Jour. Bot. Schrad. **3**[3]: 55–57. *pl. 2.* 1809.—Duo genera fungorum.

Dufour, Léon Marie, 1861– (L. Dufour).

Atl. Champ. 1–80. *pl. 1–80.* 1891.—Atlas des champignons comestibles et vénéneux.

Issued in 10 parts, but these all appeared during the same year.

Duss, Antoine, 1840– (Duss).

Énum. Champ. Guad. 1–94. 1903.—Énumération méthodique des champignons recueillis a la Guadeloupe & a la Martinique.

All nomenclature by Patouillard.

E. & P.: see **Engler; Prantl.**

Earle, Franklin Sumner, 1856– (Earle).

Bull. N. Y. Bot. Gard. **2**: 331–350. 25 Ap 1902.—Mycological studies. I.

Bull. N. Y. Bot. Gard. **3**: 289–312. 30 Je 1904.—Mycological studies. II.

Bull. N. Y. Bot. Gard. **5**: 373–451. 21 Ja 1909.—The genera of the North American gill fungi.

Inf. An. Estac. Centr. Agron. Cuba **1**: 225–242. *pl. 31–42.* 1906.—Algunos hongos cubanos.

Ehrenberg, Christian Gottfried, 1795–1876 (Ehrenb.).

Horae Phys. Berol. 77–104. *pl. 17–20.* 1820.—Fungos a viro clarissimo Adalberto de Chamisso . . . in itinere circa terrarum globum collectos enumeravit novosque descripsit et pinxit.

Ellis, Job Bicknell, 1829–1905 (Ellis).

Am. Nat. **18**: 721, 722. Jl 1884.—Notes on fungi.

Bull. Torrey Club **5**: 45, 46. N 1874.—New species of fungi.

Bull. Torrey Club **6**: 75–77. F 1876.—New fungi found at Newfield, New Jersey. (Continued.)

Bull. Torrey Club **6**: 106–109. S 1876.—South Jersey fungi.—Descriptions of some new species found at Newfield, New Jersey. (Continued.)

Bull. Torrey Club **8**: 64–66. Je 1881.—New species of North American fungi.

Bull. Torrey Club **9**: 18–20. F 1882.—New North American fungi.

N. Am. Fungi *1–1500.* 1878–85.—North American fungi.

1–200.	1878.	*501–700.*	1881.	*1101–1300.*	1884.
201–400.	1879.	*701–900.*	1882.	*1301–1500.*	1885.
401–500.	1880.	*901–1100.*	1883.		

For continuation, see Ellis & Ev. N. Am. Fungi.

Ellis, Job Bicknell, 1829–1905; Anderson, Frederick William, 1866–1891 (Ellis & And.).

Bot. Gaz. **16**: 45–49. *pl. 7.* F 1891.—New species of Montana fungi.

Ellis, Job Bicknell, 1829–1905; Bartholomew, Elam, 1852– (Ellis & Barth.).

Erythea **4**: 1–4. 2 Ja 1896.—New Kansas fungi.

Erythea **4**: 79–83. 9 My 1896.—New species of Kansas fungi.—I.

Ellis, Job Bicknell, 1829–1905; Everhart, Benjamin Matlack, 1818–1904 (Ellis & Ev.).

Am. Nat. **31**: 339–343. Ap 1897.—New species of fungi from various localities.

Am. Nat. **31**: 426–430. My 1897.—New species of fungi from various localities. (Continued.)

Bull. Lab. Nat. Hist. Univ. Iowa **4**: 67–72. D 1896.—New species of tropical fungi.

Bull. Torrey Club **22**: 434–440. 31 O 1895.—New species of fungi.

Bull. Torrey Club **24**: 125–137. 30 Mr 1897.—New species of fungi from various localities.

Bull. Torrey Club **25**: 501–514. 10 S 1898.—New species of fungi from various localities.

Bull. Torrey Club **27**: 49–64. 17 F 1900.—New species of fungi from various localities with notes on some published species.

Fungi Columb. *1–2200.* 1893–1906.—Fungi columbiani.

1–200.	1893.	*1201–1300.*	1898.	*1701–1800.*	1903.
201–600.	1894.	*1301–1400.*	1899.	*1801–1900.*	28 D 1903.
601–800.	1895.	*1401–1500.*	Mr 1901.	*1901–2000.*	15 N 1904.
801–1100.	1896.	*1501–1600.*	D 1901.	*2001–2100.*	20 Mr 1905.
1101–1200.	1897.	*1601–1700.*	1902.	*2101–2200.*	30 Ja 1906.

Nos. *1401–1500* ed. by C. L. Shear; *1501–2200* by E. Bartholomew.

For continuation, see Barth. Fungi Columb.

Jour. Myc. **5**: 24–29. *pl. 8.* Mr 1889.—Some new species of hymenomycetous fungi.

N. Am. Fungi *1501–3600.* 1886–98.—North American fungi. Second series.

For "first series," *1–1500*, see Ellis, N. Am. Fungi.

1501–1700. 1886. *2301–2500.* 1890. *3001–3200.* 1894.
1701–1900. 1887. *2501–2700.* 1891. *3201–3300.* 1895.
1901–2100. 1888. *2701–2800.* 1892. *3301–3500.* 1896.
2101–2300. 1889. *2801–3000.* 1893. *3501–3600.* 1898.

Proc. Acad. Phila. **1893**: 440–456. 27 F 1894; 457–466. 13 Mr 1894.—New species of fungi from various localities.

Proc. Acad. Phila. **1894**: 322–384. 11 D 1894; 385, 386. 8 Ja 1895.—New species of fungi from various localities.

Proc. Acad. Phila. **1895**: 413–434. 5 N 1895; 435–441. 10 D 1895.—New species of fungi from various localities.

Ellis, Job Bicknell, 1829–1905; Galloway, Beverly Thomas, 1863– (Ellis & Gall.).

Jour. Myc. **5**: 141, 142. *pl. 12.* S 1889.—A new Mucronoporus.

Ellis, Job Bicknell, 1829–1905; Macbride, Thomas Huston, 1848– (Ellis & Macbr.).

Bull. Lab. Nat. Hist. Univ. Iowa **3**[2]: 190–194. F 1896.—Nicaraguan Hymenomycetes.

Ellis, Job Bicknell, 1829–1905; Martindale, Isaac Comly, 1842–1893 (Ellis & Martindale).

Ellrodt, Theodor Christian, 1767–1804 (Ellrodt).

Schwamm-Pomona 1–302. *pl. 1–13.* 1800.—Schwamm-Pomona, oder gemeinnützige Beschreibung der bekannten essbaren und giftigen Schwämme Deutschlands.

Engler, Heinrich Gustav Adolf, 1844– ; Prantl, Karl Anton Eugen, 1849–1893 (E. & P.).

Nat. Pfl. 1887–1911.—Die natürlichen Pflanzenfamilien.

The year-dates of the mycological parts of this work are:

1[1]: 1–32. 1889. **1**[1]: 273–513. 1897. **1**[1*]: 193–249. 1907.
1[1]: 33–80. 1892. **1**[1*]: 1–48. 1898. **1**[1**]: 1–96. 1897.
1[1]: 81–128. 1893. **1**[1*]: 49–96. 1903. **1**[1**]: 97–288. 1898.
1[1]: 129–176. 1894. **1**[1*]: 97–144. 1905. **1**[1**]: 289–336. 1899.
1[1]: 177–272. 1896. **1**[1*]: 145–192. 1906. **1**[1**]: 337–570. 1900.

Eriksson, Jacob, 1848– (Eriksson).

Fungi Paras. Scand. *1–500.* 1882–95.—Fungi parasitici scandinavici exsiccati.

1–50. 1882. *151–250.* 1886. *301–400.* 1891.
51–150. 1883. *251–300.* 1888. *401–500.* 1895.

Fairman, Charles Edward, 1856– (Fairman).

Proc. Rochester Acad. Sci. **2**: 154–167. F 1893.—Hymenomyceteae of Orleans County, N. Y.

Fayod, Victor, 1860–1900 (Fayod).

Ann. Sci. Nat. VII. **9**: 181–411. *pl. 6, 7.* 1889.—Prodrome d'une histoire naturelle des Agaricinés.

Fries, Elias Magnus, 1794–1878 (Fries).

Anteckn. Sv. Aetl. Svamp. 1–68. 1836.—Anteckningar öfver de i Sverige växande ätliga Svampar.

A series of 8 dissertations, consecutively paged, and all published the same year.

Boleti 1–14. 1835.—Boleti, fungorum generis, illustratio.

Elench. Fung. **1**: 1–238. **2**: 1–154. 1828.—Elenchus fungorum.

Epicr. Myc. 1–610. 1838.—Epicrisis systematis mycologici seu synopsis Hymenomycetum.

Title-page dated "1836–1838," but there is no evidence that any part of the volume was issued until 1838.

Gen. Hymen. 1–17. 1836.—Genera Hymenomycetum.

Hymen. Eur. 1–755. 1874.—Hymenomycetes europaei sive Epicriseos systematis mycologici editio secunda.

Sometimes cited in error as "ed. 2," because of the "editio secunda" in the title.

Ic. Hymen. 1867–84.—Icones selectae Hymenomycetum nondum delineatorum.

1: 1–10. *pl. 1–10.* 1867.
1: 11–26. *pl. 11–30.* 1869.
1: 27–36. *pl. 31–40.* 1870.
1: 37–48. *pl. 41–50.* 1871.
1: 49–60. *pl. 51–60.* 1872.
1: 61–86. *pl. 61–80.* 1873.
1: 87–102. *pl. 81–90.* 1874.
1: 103–116. *pl. 91–100.* 1875.

2: 1–10. *pl. 101–110.* 1877.
2: 11–30. *pl. 111–130.* 1878.
2: 31–40. *pl. 131–140.* 1879.
2: 41–48. *pl. 141–150.* 1880.
2: 49–58. *pl. 151–160.* 1881.
2: 59–78. *pl. 161–180.* 1882.
2: 79–104. *pl. 181–200.* 1884.

Erroneously cited as "Ic. Myc." in several places on pages 247–364 of this volume.

Linnaea **5**: 497–553. 1 O 1830.—Ecolgae fungorum, praecipue ex herbariis Germanorum descriptorum.

Monog. Hymen. Suec. 1857–63.—Monographia Hymenomycetum Sueciae.

1: 1–484. 1857. **2**: 1–355. 1863.

Nova Acta Soc. Sci. Upsal. III. **1**: 17–136. 1851.—Novae symbolae mycologicae in peregrinis terris a botanicis danicis collectae.

Cited as "Nov. Symb." at various places in this volume, especially on the earlier pages.

Nova Acta Soc. Sci. Upsal. III. **1**: 225–231. 1851.—Novarum symbolarum mycologicarum mantissa.

Obs. Myc. 1815–18.—Observationes mycologicae.

1: 1–230. *pl. 1–4.* 1815. **2**: 1–372. *pl. 5–8.* 1818.

Summa Veg. Scand. 1–572. 1845–49.—Summa vegetabilium Scandinaviae.

1–258. 1845. 259–572. 1849.

Sv. Aetl. Svamp. 1–53. *pl. 1–93.* "1861" [1860–66].—Sveriges ätliga och giftiga svampar.

1–10. *pl. 1–8.* 1860.
11–14. *pl. 9–17.* 1861.
15–24. *pl. 18–35.* 1862.
25–32. *pl. 36–53.* 1863.
33–36. *pl. 54–63.* 1864.
37–40. *pl. 64–73.* 1865.
41–53. *pl. 74–93.* 1866.

Syn. Gen. Lent. 1–15. 1836.—Synopsis generis Lentinorum.

Syst. Myc. 1821–32.—Systema mycologicum.

1: 1–520. 1821. **2**: 1–274. 1822. **2**: 275–620. 1823. **3**: 1–260. 1829. **3**: 261–524. 1832.

Syst. Orbis Veg. 1–374. 1825.—Systema orbis vegetabilis. Pars I. Plantae homonemeae.

Frost, Charles Christopher, 1805–1880 (**Frost**).

Bull. Buffalo Soc. Nat. Sci. **2**: 100–105. Je 1874.—Catalogue of Boleti of New England, with descriptions of new species.

In Tuckerm. & Frost, Cat. Pl. Amherst 62–97. 1875.—Fungi.

Frost, Charles Christopher, 1805–1880; Peck, Charles Horton, 1833– (**Frost & Peck**).

Gärtner, Philipp Gottfried, 1754–1825; Meyer, Bernhard, 1767–1836; Scherbius, Johannes, 17—?–1813 (**Gärtn., Meyer & Scherb.**).

Fl. Wett. 1799–02.—Oekonomisch-technische Flora der Wetterau.

1: 1–532. 1799. **2**: 1–512. 1800. **3**[1]: 1–438. Anh. 1–30. 1801. **3**[2]: 1–388. 1802.

Gaudichaud-Beaupré, Charles, 1789–1854 (**Gaud.**).

Voy. Freyc. Bot. 1–522. *pl. 1–120.* 1826–[30].—Voyage autour du monde . . . exécuté sur les corvettes de S. M. l'Uranie et la Physicienne . . . par M. Louis de Freycinet. Botanique.

1–88. *pl. 1–20.* 1826.
89–216. *pl. 21–50.* 1827.
217–360. *pl. 51–80.* 1828.
361–464. *pl. 81–110.* 1829.
465–522. *pl. 111–120.* 1830.

Gibson, William Hamilton, 1850–1896 (**Gibson**).

Edible Toadst. 1–337. *pl. 1–38.* 1895.—Our edible toadstools and mushrooms and how to distinguish them.

Gillet, Claude Casimir, 1806–1896 (Gill.).

Champ. Fr. 1–828. *pl. 1–133.* 1874–78.—Champignons (Fungi, Hyménomycètes) qui croissent en France.

Supplementary plates were issued at intervals, bringing the total number up to above 700, and they were successively and repeatedly renumbered in lists distributed with them.

Approximate dates of text:

1–176. 1874. 177–560. 1876. 561–828. 1878.

Rev. Myc. **3**[9]: 4, 5. 1 Ja 1881.—Deux nouvelles espèces françaises d'Hyménomycètes.

Tabl. Anal. 1–199. 1884.—Tableaux analytiques des Hyménomycètes.

Gillot, François Xavier, 1842–1910 (Gillot).

Rev. Myc. **4**: 230–237. 1 O 1882.—Nouvelles observations sur quelques champignons récoltés dans les galeries souterraines du Creusot (Saône-et-Loire) et d'Allevard (Isère).

Gmelin, Johann Friedrich, 1748–1804 (J. F. Gmel.).

Syst. Nat. 1788–93.—Caroli a Linné Systema naturae.

1: 1–4120. 1788. **2**: 1–1661. 1791. **3**: 1–476. 1793.

Botany in vol. 2 only.

Gray, Samuel Frederick, 1780–1836 (S. F. Gray).

Nat. Arr. Brit. Pl. **1**: 1–824. *pl. 1–21.* **2**: 1–757. 1821.—A natural arrangement of British plants.

Greene, Edward Lee, 1842–1915 (Greene).

Pl. Baker. 1901.—Plantae Bakerianae.

Only 3 fragments published:

1: 1–52. 22 F 1901. **2**: 1–42. 25 Mr 1901. **3**: 1–36. 18 N 1901.

Greville, Robert Kaye, 1794–1866 (Grev.).

Griffiths, David, 1867– (D. Griff.).

W. Am. Fungi *1–400.* 1901–02.—West American fungi.

1–100. 1901. *101–400.* 1902.

Hahn, Gotthold (Hahn).

Pilz-Samml. ed. 2. 1–201. *pl. 1–32* (*f. 1–172*). 1890.—Der Pilz-Sammler. Zweite völlig umgearbeitete und vervollstandige Auflage.

Haller, Albrecht von, 1708–1777 (Hall.).

Hist. Stirp. Helv. 1768.—Historia stirpium indigenarum Helvetiae inchoata.

1: 1–444. *pl. 1–20.* **2**: 1–323. *pl. 21–44.* **3**: 1–204. *pl. 45–48.*

Hard, Miron Elisha, 1849–1914 (Hard).

Mushr. 1–609. *f. 1–504.* [N] 1908.—The mushroom, edible and otherwise.

Hartig, Robert, 1839–1901 (R. Hartig).

Wicht. Krankh. Waldb. 1–127. *f. 1–160.* 1874.—Wichtige Krankheiten der Waldbäume.

Harzer, Carl August Friedrich, 1784–1846 (Harzer).

Abbild. Pilze 1–136. *pl. 1–80.* 1842–45.—Naturgetreue Abbildungen der vorzüglichsten essbaren, giftigen und verdächtigen Pilze.

Hennings, Paul Christoph, 1841–1908 (P. Henn.).

Bot. Jahrb. **22**: 72–111. 19 N 1895.—Fungi camerunenses. I.

Bot. Jahrb. **28**: 259–272. 9 Mr 1900; 273–280. 22 My 1900.—Fungi japonici.

Hedwigia **36**: 190–192. *pl. 5.* 25 Je 1897; 193–246. 1 Au 1897.—Beiträge zur Pilzflora Südamerikas II.

Hedwigia **37**: 267–272. 25 Ô 1898; 273–276. 31 D 1898.—Fungi americani-boreales.

Hedwigia **37**: 277–282. 31 D 1898.—Fungi jamaicenses.

Hedwigia **43**: 154–186. *pl. 3.* 16 My 1904.—Fungi amazonici I. a cl. Ernesto Ule collecti.

In E. & P. Nat. Pfl. **1**[1**]: 105–276. 1898.—Hymenomycetineae.

Verh. Bot. Ver. Prov. Brand. **39**: vc, vci. 4 Ja 1898.—[Ueber Lentinus anisatus P. Henn. n. sp.]

Hennings, Paul Christoph, 1841–1908; Shirai, Mitsutarō (P. Henn. & Shirai).

Herpell, Gustav Jacob, 1828–1912 (Herpell).

Präp. Hutpilze *1–135*. 1880–92.—Sammlung präparirter Hutpilze.

1–35.	1880.	*56–75*.	1882.	*96–115*.	1888.
36–55.	1881.	*76–95*.	1884.	*116–135*.	1892.

Hoffmann, Georg Franz, 1761–1826 (Hoffm.).

Nom. Fung. 1–256. *pl. 1–6*. 1789.—Nomenclator fungorum. Pars. I. Agarici.

Hooker, William Jackson, 1785–1865 (Hook.).

In Kunth, Syn. Pl. **1**: 7–13. 1822.—Fungi.

Horaninow, Paul Fedorowitsch, 1796–1865 (Horan.).

Howe, Elliot Calvin, 1828–1899 (Howe).

Bull. Torrey Club **5**: 42, 43. O 1874.—New fungi. No. II.

Hudson, William, 1730–1793 (Huds.).

Fl. Angl. ed. 2. 1–690. 1778.—Flora anglica. Editio altera, emendata et aucta.

Hussey, A. M. (Hussey).

Ill. Brit. Myc. 1847–55.—Illustrations of British mycology.

[**1**:] *pl. 1–90*.	1847[–49?].	**2**: *pl. 1–50*.	18[51?–]55.

Jacquin, Nicolaus Josef von, 1727–1817 (Jacq.).

Coll. 1786–96.—Collectanea ad botanicam, chemiam et historiam naturalem spectantia.

1: 1–386. *pl. 1–22*.	1786.	**3**: 1–306. *pl. 1–23*.	1789.
2: 1–374. *pl. 1–18*.	1788.	**4**: 1–359. *pl. 1–27*.	1790.

Coll. Suppl. 1–171. *pl. 1–16*. 1796.—Collectaneorum supplementum.

Fl. Austr. 1773–78.—Florae austriacae, sive plantarum selectarum in Austriae archiducatu sponte crescentium, icones.

1: 1–61. *pl. 1–100*.	1773.	**4**: 1–53. *pl. 301–400*.	1776.
2: 1–60. *pl. 101–200*.	1774.	**5**: 1–56. *pl. 401–450*. App. *pl. 1–50*.	1778.
3: 1–55. *pl. 201–300*.	1775.		

Misc. Austr. 1778–81.—Miscellanea austriaca ad botanicam, chemiam et historiam naturalem spectantia.

1: 1–212. *pl. 1–21*.	1778.	**2**: 1–423. *pl. 1–23*.	1781.

Jaczewski, Arthur Arthurovič de, 1863–; Komarov, Vladimir Leontjevic; Tranzschel, Woldemar (Jacz.-Kom.-Tranz.).

Fungi Rossiae *51–350*. 1895–1900.—Fungi Rossiae exsiccati.

Continuation of Jacz. Fungi Rossiae.

51–100.	1895.	*151–250*.	1898.	*301–350*.	1900.
101–150.	1896.	*251–300*.	1899.		

Johnson, Asa Emery, 1825–1906 (Johnson).

Bull. Minn. Acad. Sci. **1**: 203–302. 1877.—Report of the committee on botany. The mycological flora of Minnesota.

Bull. Minn. Acad. Sci. **1**: 325–344. 1878.—Report of the committee on botany, for 1877.

Jordan, David Starr, 1851– (D. S. Jordan).

Fur Seals N. Pacif. 1898–99.—The fur seals and fur-seal islands of the North Pacific Ocean.

In 4 vols.; vol. **3**(1899) contains botanical contributions.

Junghuhn, Friedrich Franz Wilhelm, 1809–1864 (Jungh.).

Crypt. Java 1–86. *pl. 1–15*. [1838.]—Praemissa in floram cryptogamicam Javae insulae. Fasc. I. Continet enumerationem fungorum, quos in excursionibus per diversas Javae regiones hucusque observavit.

Separate (in advance?) from Verh. Batav. Genoots. **17**[2]: 1–86. *pl. 1–15*. "1839."

Kalchbrenner, Károly, 1807–1886 (Kalchbr.).

Ic. Hymen. Hung. 1–66. *pl. 1–40.* 1873–77.—Icones selectae Hymenomycetum Hungariae.

1–20. *pl. 1–10.*	1873.	37–50. *pl. 21–30.*	1875.
21–36. *pl. 11–20.*	1874.	51–66. *pl. 31–40.*	1877.

Karsten, Petter Adolf, 1834– (P. Karst.).*

Acta Soc. Faun. Fl. Fenn. **2**[1]: 1–40. 1881.—Hymenomycetes fennici.

Bidr. Finl. Nat. Folk **32**: 1–571. 1879.—Rysslands, Finlands, och den Skandinaviska halföns Hattsvampar. Förra delen: Skifsvampar.

Bidr. Finl. Nat. Folk **37**: 1–257. 1882.—Rysslands, Finlands och den Skandinaviska halföns Hattsvampar. Sednare delen: Pip-, Tagg-, Hud-, Klubb- och Gelésvampar.

Bidr. Finl. Nat. Folk **48**: 1–470. 1889.—Kritisk öfversigt af Finlands Basidsvampar (Basidiomycetes: Gastero- & Hymenomycetes).

Cited as "Finl. Basidsv." in various places in this volume.

Fungi Fenn. *1–1000.* 1865–70.—Fungi Fenniae exsiccati. Sammling of Finska svampar.

1–300.	1865.	*601–700.*	1867.	*801–900.*	1869.
301–600.	1866.	*701–800.*	1868.	*901–1000.*	1870.

Sometimes cited erroneously in this volume as "Finl. Fungi;" the set used was one made up by Karsten from specimens collected (at least in part) long after the original exsiccati were distributed, and is therefore not wholly reliable.

Hedwigia **22**: 163, 164. N 1883.—Fragmenta mycologica III.

Medd. Soc. Faun. Fl. Fenn. **5**: 15–46. 1879.—Symbolae ad mycologiam fennicam. VI.

Medd. Soc. Faun. Fl. Fenn. **6**: 1–6. 1881.—Symbolae ad mycologiam fennicam. VII.

Medd. Soc. Faun. Fl. Fenn. **16**: 84–106. 1889.—Symbolae ad mycologiam fennicam. Pars XXIX.

Rev. Myc. **3**[9]: 16–19. 1 Ja 1881.—Enumeratio Boletinearum et Polyporearum fennicarum, systemate novo dispositarum.

Sydv. Finl. Polyp. 1–47. D 1859.—Sydvestra Finlands Polyporeer.

Kauffman, Calvin Henry, 1869– (C. H. Kauffman).

Rep. Mich. Acad. Sci. **11**: 55–91. 1909.—Unreported Michigan fungi for 1908, with a monograph of the russulas of the state.

Kellerman, William Ashbrook, 1850–1908 (Kellerm.).

Ohio Fungi *1–200.* 1901–05.—Ohio fungi exsiccati.

1–16.	1901.	*81–160.*	1903.	*181–200.*	1905.
17–80.	1902.	*161–180.*	1904.		

Kickx, Jean, 1803–1864 (Kickx f.).

Bull. Acad. Brux. **5**: 370–373. *pl.* 1838.—Sur une nouvelle espêce exotique de polypore.

Bull. Acad. Brux. **8**[2]: 72–81. *pl. 1, 2.* 1841.—Sur quelques champignons du Mexique.

Klotzsch, Johann Friedrich, 1805–1860 (Klotzsch).

Herb. Viv. Myc. ed. 2. *1–800.* 1855–58.—Klotzschii Herbarium vivum mycologicum. Editio nova.

Edited by Gottlob Ludwig Rabenhorst.

1–200.	1855.	*401–600.*	1857.
201–400.	1856.	*601–800.*	1858.

Linnaea **7**: 193–204. *pl. 8–10.* 1832.—Mycologische Berichtigungen.

Linnaea **8**: 316, 317. *pl. 5.* 1833.—De Favolo, genere Hymenomycetum a Friesio proposito.

Linnaea **8**: 478–490. *pl. 11, 12.* 1833.—Fungi exotici e collectionibus Brittanorum.

Nova Acta Acad. Leop.-Carol. **19**: 233–246. 1843.—Fungi [quos Meyenius collegit].

Krieger, Karl Wilhelm (Krieger).

Fungi Sax. *1–2300.* 1885–1914.—Fungi saxonici exsiccati.

* The abbreviation **Karst.** was used in the earlier portions of this volume; it is used elsewhere in this Flora, however, for **Gustav Karl Wilhelm Hermann Karsten, 1817–1908.**

1–100.	1885.	*1001–1100.*	1895.	*1751–1850.*	1904.
101–200.	1886.	*1101–1200.*	1896.	*1851–1900.*	1905.
201–300.	1887.	*1201–1300.*	1897.	*1901–2000.*	1906.
301–400.	1888.	*1301–1400.*	1898.	*2001–2050.*	1907.
401–500.	1889.	*1401–1500.*	1899.	*2051–2100.*	1909.
501–600.	1890.	*1501–1600.*	1900.	*2101–2150.*	1911.
601–700.	1891.	*1601–1650.*	1901.	*2151–2200.*	1912.
701–800.	1892.	*1651–1700.*	1902.	*2201–2250.*	1913.
801–900.	1893.	*1701–1750.*	1903.	*2251–2300.*	1914.
901–1000.	1894.				

Schädl. Pilze *1–150.* 1896–1903.—Schädliche Pilze unserer Kulturgewächse.

1–50.	1896.	*51–100.*	1899.	*101–150.*	1903.

Krombholz, Julius Vincenz von, 1782–1843 (Krombh.).

Abbild. 1831–46.—Naturgetreue Abbildungen und Beschreibungen der essbaren, schädlichen und verdächtigen Schwämme.

1: 1–85. *pl. 1–6.*	1831.	**6**: 1–30. *pl. 39–46.*	1841.
2: 1–30. *pl. 7–14.*	1832.	**7**: 1–24. *pl. 47–54.*	1841.
3: 1–36. *pl. 15–22.*	1834.	**8**: 1–31. *pl. 55–62.*	1843.
4: 1–32. *pl. 23–30.*	1836.	**9**: 1–28. *pl. 63–70.*	1845.
5: 1–17. *pl. 31–38.*	1836.	**10**: 1–28. *pl. 71–76.*	1846.

Kunth, Carl Sigismund, 1788–1850 (Kunth).

Syn. Pl. 1822–25.—Synopsis plantarum, quas, in itinere ad plagam aequinoctialem orbis novi, collegerunt Al. de Humboldt et Am. Bonpland.

1: 1–491.	1822.	**3**: 1–496.	1824.
2: 1–526.	1823.	**4**: 1–528.	1825.

1: 1–6 by C. A. Agardh; **1**: 7–65 by W. J. Hooker (see preface).

Kuntze, Carl Ernst Otto, 1843–1907 (Kuntze).

Rev. Gen. 1891–98.—Revisio generum plantarum.

Vols. **1** and **2** consecutively paged; a third volume issued later, as an afterthought.

1–1011.	5 N 1891.	**3**^{2}: 1–202.	28 S 1898.
3: i–ccccxx.	5 Au 1893.	**3**^{3}: 1–576.	28 S 1898.

Kunze, Gustav, 1793–1851 (Kunze).

Kunze, Johannes, 18–?–1881 (J. Kunze).

Fungi Sel. *1–600.* 1877–81.—Fungi selecti exsiccati.

1–200.	1877.	*201–400.*	1879.	*401–600.*	1881.

L.: see **Linnaeus.**

Lamarck, Jean Baptiste Antoine Pierre Monnet de, 1744–1829 (Lam.).

Encyc. 1783–1808.—Encyclopédie méthodique. Botanique.

1: 1–368.	D 1783.	**3**: 1–360.	1789.	**5**: 1–748.	1804.
1: 369–752.	Au 1785.	**3**: 361–753.	1791.	**6**: 1–786.	1804.
2: 1–368.	O 1786.	**4**: 1–400.	1796.	**7**: 1–731.	1806.
2: 369–774.	Ap 1788.	**4**: 401–764.	F 1797.	**8**: 1–879.	1808.

Fl. Fr. **1**: 1–132. **2**: 1–684. **3**: 1–654. 1778.—Flore française.

Lanzi, Matteo, 1824–1908 (Lanzi).

Funghi Mang. 1–406. *pl. 1–131.* "1894" [1896–1902].—Funghi mangerecci e nocivi di Roma.

1–53. *pl. 1–8.*	1896.	197–248. *pl. 67–82.*	1900.
55–92. *pl. 9–21.*	1897.	249–344. *pl. 83–116.*	1901.
93–140. *pl. 22–45.*	1898.	345–406. *pl. 117–131.*	1902.
141–196. *pl. 46–66.*	1899.		

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Linnaea **4**: 518–553. O 1829.—Enumeratio Hymenomycetum pileatorum marchiae brandenburgicae, nondum in floris nostratibus nominatorum, cum observationibus in cognitos et novorum descriptionibus.

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Lenz, Harald Othmar, 1798–1870 (Lenz).

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101–200.	1832.	*301–400.*	1837.

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33–48.	1900.	245–308.	1906.	509–524.	1912.
49–80.	1901.	309–364.	1907.	525–540.	1915.
81–120.	1902.	365–412.	1908.	541–588.	1916.
121–156	1903.	413–444.	1909.		

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pl. 1–25.	1881.	*pl. 151–175.*	1886.	*pl. 326–350.*	1892.
pl. 26–75.	1882.	*pl. 176–225.*	1887.	*pl. 351–375.*	1893.
pl. 76–100.	1883.	*pl. 226–250.*	1888.	*pl. 376–400.*	1894.
pl. 101–125.	1884.	*pl. 251–275.*	1889.	*pl. 401–425.*	1895.
pl. 126–150.	1885.	*pl. 276–325.*	1890.		

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Jour. Cinc. Soc. Nat. Hist. **7**: 5–10. *pl. 1.* Ap 1884.—The mycologic flora of the Miami valley, O. (Continued.)

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2: 13–32. *pl. 67–78.* 1809.
2: 33–44. *pl. 79–84.* 1812.
2: 45–72. *pl. 85–102.* 1816.
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1: 1–40. *f. 1–100.* 1883.
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101–300.	1904.	*651–750.*	1908.	*1051–1150.*	1912.
301–450.	1905.	*751–850.*	1909.	*1151–1200.*	1913.
451–550.	1906.	*851–950.*	1910.		

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201–400.	1882.	*2501–2900.*	1889.	*4401–4600.*	1896.
401–600.	1883.	*2901–3100.*	1890.	*4601–4700.*	1897.
601–800.	1884.	*3101–3500.*	1891.	*4701–4800.*	1898.
801–1000.	1885.	*3501–3800.*	1892.	*4801–4900.*	1899.
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1–64. *pl. 1–9*.	1832.	165–228. *pl. 22–29*.	1834.
65–164. *pl. 10–21*.	1833.	229–364. *pl. 30–44*.	1835.

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INDEXES

INDEX TO FAMILIES AND TRIBES

Agaricaceae **163**
Agaricanae 237
Agariceae 163, **237**
Boletaceae **133**
Chantereleae **163**
Daedaleae 1, **2**
Fomiteae 1, **2**
Lactarieae 163, **172**
Lepiotanae 237, **297**
Pholiotanae 273
Pluteanae 237
Polyporaceae **1**
Polyporeae **1**
Porieae **1**

INDEX TO RECOGNIZED GENERA AND SPECIES

Abortiporus 64
distortus (Schw.) Murrill 64
Amauroderma 115
avellaneum Murrill 116
Chaperi (Pat.) Murrill 116
coffeatum (Berk.) Murrill 116
flaviporum Murrill 116
nutans (Fries) Murrill 116
regulicolor (Cooke) Murrill 116
renatum (Berk.) Murrill 117
subrenatum Murrill 117
Antrodia 82
mollis (Sommerf.) P. Karst. 82
Asterophora 166
clavus (Schaeff.) Murrill 166
Aurantiporellus 70
alboluteus (Ellis & Ev.) Murrill 70
Aurantiporus 71
Pilotae (Schw.) Murrill 72
Bjerkandera 40
adusta (Willd.) P. Karst. 40
albostygia (Berk. & Curt.) Murrill 41
fumosa (Pers.) P. Karst. 41
puberula (Berk. & Curt.) Murrill 41
subsimulans Murrill 42
terebrans (Berk. & Curt.) Murrill 42
Boletellus 156
Ananas (M. A. Curt.) Murrill 156
Boletinellus 158
castanellus (Peck) Murrill 158
merulioides (Schw.)Murrill 158
paluster (Peck) Murrill 158
Boletinus 159
appendiculatus Peck 160
Berkeleyi Murrill 159
cavipes (Opat.) Kalchb. 159
grisellus Peck 159
pictus Peck 160
spectabilis Peck 160
Boletus 154
amabilis Peck 155
Clintonianus Peck 155
luteus L. 155
sphaerosporus Peck 155
Camarophyllus 385
albipes (Peck) Murrill 388
Camarophyllus
albo-umbonatus Murrill 390
angustifolius Murrill 386
auratocephalus (Ellis) Murrill 387
basidiosus (Peck) Murrill 389
borealis (Peck) Murrill 385
Burnhami (Peck) Murrill 389
caespitosus Murrill 387
Cantharellus (Schw.) Murrill 388
cremicolor Murrill 389
fulvosus (Bolt.) Murrill 387
nigridius (Peck) Murrill 389
obconicus (Peck) Murrill 386
pallidus (Peck) Murrill 386
Peckianus (Howe) Murrill 389
recurvatus (Peck) Murrill 388
sphaerosporus (Peck) Murrill 386
squamulosus (Ellis & Ev.) Murrill 388
subrufescens (Peck) Murrill 387
virgineus (Wulfen) Murrill 386
Ceriomyces 136
affinis (Peck) Murrill 142
alabamensis Murrill 146
albellus (Peck) Murrill 138
Atkinsonianus Murrill 144
auriflammeus (Berk. & Curt.) Murrill 141
auriporus (Peck) Murrill 140
Betula (Schw.) Murrill 138
bicolor (Peck) Murrill 147
chromapes (Frost) Murrill 139
communis (Bull.) Murrill 150
conicus (Rav.) Murrill 140
crassus Batt. 142
Curtisii (Berk.) Murrill 143
eximius (Peck) Murrill 141
ferruginatus (Batsch) Murrill 143
flaviporus (Earle) Murrill 140
frustulosus (Peck) Murrill 138
fumosipes (Peck) Murrill 149
griseo-roseus Murrill 139
griseus (Frost) Murrill 138
guadelupensis (Pat.) Murrill 146
hemichrysus (Berk. & Curt.) Murrill 141
Housei Murrill 145
illudens (Peck) Murrill 145
inflexus (Peck) Murrill 143

Ceriomyces
Maxoni Murrill 146
miniato-olivaceus (Frost) Murrill 147
pallidus (Frost) Murrill 147
parasiticus (Bull.) Murrill 141
Peckii (Frost) Murrill 144
retipes (Berk. & Curt.) Murrill 146
Roxanae (Frost) Murrill 148
Russellii (Frost) Murrill 137
scabripes (Peck) Murrill 148
sordidus (Frost) Murrill 149
speciosus (Frost) Murrill 144
subglabripes (Peck) Murrill 148
subpallidus Murrill 145
subsanguineus (Peck) Murrill 145
subtomentosus (L.) Murrill 149
tabacinus (Peck) Murrill 144
tomentipes (Earle) Murrill 149
Vanderbiltianus Murrill 140
viscidus (L.) Murrill 139
Cerrena 124
stereoides (Fries) Murrill 124
unicolor (Bull.) Murrill 124
Cerrenella 73
farinacea (Fries) Murrill 74
Ravenelii (Berk.) Murrill 73
subcoriacea Murrill 74
Chanterel 167
alectorolophoides (Schaeff.) Murrill 169
behringensis Berk. & Curt. 167
Chantarellus (L.) Murrill 169
cinnabarinus Schw. 170
floccosus Schw. 168
infundibuliformis (Scop.) Fries 168
mexicanus Fries 171
minor Peck 169
Morgani Peck 170
muscoides (Wulfen) Murrill 170
Petersii Berk. & Curt. 168
pruinosus Peck 167
pulchrifolius Peck 167
rosellus Peck 170
Wrightii Berk. & Curt. 170
Chlorophyllum 172
viride (Pat.) Murrill 172
Clitocybe 396
adirondackensis (Peck) Sacc. 401
albidula Peck 400
albiformis Murrill 412
aperta (Peck) Sacc. 400
atrialba Murrill 415
avellaneialba Murrill 414
Broadwayi Murrill 416
brunnescens Murrill 415
candens Murrill 399
catina (Fries) Quél. 402
clavipes (Pers.) Quél. 410
coloradensis Murrill 410
compressipes (Peck) Sacc. 408
concava (Scop.) Gill. 409
connexa (Peck) Sacc. 401
cuticolor Murrill 413
dealbata (Sow.) Gill. 398
dicolor (Pers.) Murrill 406
Earlei Murrill 410
eccentrica Peck 399
elephantina Murrill 405
farinacea Murrill 401
fellea Peck 404
flavidella (Peck) Sacc. 404
fumosa (Pers.) Quél. 409
fuscipes Peck 400
griseifolia Murrill 415
Harperi Murrill 415
hiemalis Murrill 406
hondensis Murrill 413
incrustata Murrill 416
infundibuliformis (Schaeff.) Quél. 408
inversa (Scop.) Quél. 407
lactariiformis Murrill 409
leptoloma Peck 400
media Peck 410
mexicana Murrill 416
microspora Peck 411
multiceps Peck 405
multiformis Peck 405
murinifolia Murrill 414
niveicolor Murrill 415
nobilis Peck 404
oculata Murrill 414
oreades Murrill 414
oregonensis Murrill 412
Overholtsii Murrill 403
parvula Murrill 403
Peckii Murrill 412
peltigerina (Peck) Sacc. 405
phyllophila (Pers.) Quél. 402
phyllophiloides Peck 401
pinophila (Peck) Sacc. 408
pithyophila (Fries) Gill. 399
pulcherrima Peck 404
pusilla Peck 411
regularis Peck 399
Robinsoniae Murrill 400
robusta Peck 403
rugosipes Murrill 413
sinopica (Fries) P. Karst. 407
stipitata Murrill 412
subbulbipes Murrill 404
subcandicans Murrill 412
subclavipes Murrill 407
subconcava Peck 408
subconnexa Murrill 403
subcyathiformis Peck 401
subdicolor Murrill 411
subditopoda Peck 406
subfumosipes Murrill 411
subhirta Peck 404
subinversa Murrill 413
submarmorea Murrill 403
subnigricans Peck 402
subsquamata Murrill 406
tenebricosa Murrill 402
testaceoflava Murrill 416
trojana Murrill 416
trullisata (Ellis) Sacc. 407
truncicola (Peck) Sacc. 398
variabilis Murrill 411
vialis Murrill 413
vilescens (Peck) Sacc. 409
violaceifolia Murrill 414
virens (Scop.) Sacc. 406
washingtonensis Murrill 411
Whetstoneae Murrill 398
Coltricia 91
cinnamomea (Jacq.) Murrill 91
focicola (Berk. & Curt.) Murrill 92
Memmingeri Murrill 94

Coltricia
obesa (Ellis & Ev.) Murrill 93
perennis (L.) Murrill 92
spathulata (Hook.) Murrill 93
tomentosa (Fries) Murrill 93
Coltriciella 91
dependens (Berk. & Curt.) Murrill 91
Coriolellus 28
cuneatus Murrill 28
sepium (Berk.) Murrill 28
Sequoiae (Copeland) Murrill 29
serialis (Fries) Murrill 29
Coriolopsis 74
caperata (Berk.) Murrill 77
cirrifer (Berk. & Curt.) Murrill 76
crocata (Fries) Murrill 75
fulvocinerea Murrill 76
nigrocinerea Murrill 77
occidentalis (Klotzsch) Murrill 75
rigida (Berk. & Mont.) Murrill 75
subglabrescens Murrill 77
Taylori Murrill 76
vibratilis (Berk. & Curt.) Murrill 76
vittata (Ellis & Macbr.) Murrill 76
Coriolus 16
abietinus (Dicks.) Quél. 27
alabamensis Murrill 19
armenicolor (Berk. & Curt.) Pat. 21
balsameus (Peck) Murrill 21
biformis (Klotzsch) Murrill 26
brachypus (Lév.) Murrill 21
concentricus Murrill 23
cyphelloides (Fries) Murrill 26
delectans Murrill 20
depauperatus (Pat.) Murrill 20
Drummondii (Klotzsch) Pat. 23
ectypus (Berk. & Curt.) Pat. 18
fulvo-umbrinus Murrill 24
haedinus (Berk.) Pat. 22
hexagoniformis Murrill 20
hirsutulus (Schw.) Murrill 18
hondurensis Murrill 22
leiodermus (Mont.) Murrill 23
limitatus (Berk. & Curt.) Murrill 20
Lloydii Murrill 23
maximus (Mont.) Murrill 26
membranaceus (Sw.) Pat. 23
nigromarginatus (Schw.) Murrill 24
ochrotinctellus Murrill 22
pallidofulvellus Murrill 20
pavonius (Hook.) Murrill 25
pinsitus (Fries) Pat. 24
planellus Murrill 21
prolificans (Fries) Murrill 27
pubescens (Schum.) Murrill 18
scutatus Murrill 25
sector (Ehrenb.) Pat. 19
sericeohirsutus (Klotzsch) Murrill 25
sobrius (Berk. & Curt.) Murrill 26
subchartaceus Murrill 24
subectypus Murrill 22
sublilacinus Murrill 25
subluteus (Ellis & Ev.) Murrill 19
substipitatus Murrill 22
versicolor (L.) Quél. 18
Crepidopus 304
caveatus (Berk. & Curt.) Murrill 305
commiscibilis (Berk. & Curt.) Murrill 306
connatus (Berk.) Murrill 306
Crepidopus
cornucopiae (Paulet) Murrill 305
Eugeniae (Earle) Murrill 305
hemiphlebius (Berk. & Curt.) Murrill 305
minutus (Peck) Murrill 304
ostreatus (Jacq.) S. F. Gray 304
serotinus (Schrad.) Murrill 304
Crinipellis 287
alnicola Murrill 288
echinulata Murrill 288
scabella (Alb. & Schw.) Murrill 287
squamifolia Murrill 288
stupparia (Berk. & Curt.) Pat. 288
sublivida Murrill 287
zonata (Peck) Pat. 287
Cryptoporus 94
volvatus (Peck) Shear 94
Cycloporellus 85
iodinus (Mont.) Murrill 85
Cycloporus 131
Greenei (Berk.) Murrill 131
Daedalea 124
Aesculi (Schw.) Murrill 126
amanitoides Beauv. 127
confragosa (Bolt.) Pers. 126
juniperina Murrill 125
quercina (L.) Pers. 125
Sprucei Berk. 125
Dictyolus 165
muscigenus Quél. 165
retirugus (Bull.) Quél. 166
Earliella 44
corrugata (Pers.) Murrill 45
Elfvingia 113
fasciata (Sw.) Murrill 114
fomentaria (L.) Murrill 113
Lionnetii (Rolland) Murrill 115
lobata (Schw.) Murrill 114
megaloma (Lév.) Murrill 114
tornata (Pers.) Murrill 115
Favolus 83
leprosus (Fries) Murrill 83
tenuis (Hook.) Murrill 83
variegatus (Berk.) Murrill 83
Flaviporellus 72
Splitgerberi (Mont.) Murrill 72
Flaviporus 84
crocitinctus (Berk. & Curt.) Murrill 84
rufoflavus (Berk. & Curt.)Murrill 84
Fomes 94
annosus (Fries) Cooke 97
Auberianus (Mont.) Murrill 100
Ellisianus F. W. Anderson 98
fraxineus (Bull.) Cooke 96
fraxinophilus (Peck.) Sacc. 98
geotropus Cooke 100
Laricis (Jacq.) Murrill 99
ligneus (Berk.) Cooke 97
Meliae (Underw.) Murrill 100
ohiensis (Berk.) Murrill 96
populinus (Schum.) Cooke 99
roseus (Alb. & Schw.) Cooke 95
rubritinctus Murrill 99
Sagraeanus (Mont.) Murrill 96
scutellatus (Schw.) Cooke 96
subferreus Murrill 97
ungulatus (Schaeff.) Sacc. 98
Fomitella 100
fumoso-avellanea (Romell) Murrill 101

Fomitella
supina (Sw.) Murrill 101
Fomitiporella 12
altocedronensis Murrill 12
betulina Murrill 12
Demetrionis Murrill 12
floridana Murrill 14
inermis (Ellis & Ev.) Murrill 13
Johnsoniana Murrill 13
Langloisiana Murrill 13
melleopora Murrill 13
umbrinella (Bres.) Murrill 13
Fomitiporia 7
cinchonensis Murrill 10
cubensis Murrill 8
dryophila Murrill 8
Earleae Murrill 9
flavomarginata Murrill 11
jamaicensis Murrill 11
laminata Murrill 11
Langloisii Murrill 9
Lloydii Murrill 10
Maxoni Murrill 11
obliquiformis Murrill 9
ohiensis Murrill 11
pereffusa Murrill 10
prunicola Murrill 9
tropicalis (Cooke) Murrill 8
tsugina Murrill 9
undulata Murrill 10
Funalia 78
aculeifer (Berk. & Curt.) Murrill 79
cladotricha (Berk. & Curt.) Murrill 78
hispidula (Berk. & Curt.) Murrill 78
stuppea (Berk.) Murrill 79
villosa (Sw.) Murrill 78
Fuscoporella 6
coruscans Murrill 7
costaricensis Murrill 7
ludoviciana Murrill 6
mexicana Murrill 7
palmicola (Berk. & Curt.) Murrill 6
Shaferi Murrill 7
Fuscoporia 3
carbonaria (Berk. & Curt.) Murrill 4
ferruginosa (Schrad.) Murrill 5
fulvida (Ellis & Ev.) Murrill 5
juniperina Murrill 4
marginella (Peck) Murrill 5
nicaraguensis Murrill 6
rufitincta (Cooke) Murrill 5
subiculosa (Peck) Murrill 4
viticola (Schw.) Murrill 4
Galactopus 318
haematopus (Pers.) Earle 319
rugosodiscus (Peck) Murrill 318
sanguinolentus (Alb. & Schw.) Murrill 319
succosus (Peck) Murrill 318
Ganoderma 118
argillaceum Murrill 122
Curtisii (Berk.) Murrill 120
nevadense Murrill 119
nitidum Murrill 123
oregonense Murrill 119
parvulum Murrill 123
perzonatum Murrill 121
polychromum (Copeland) Murrill 119
praelongum Murrill 121
Ganoderma
pulverulentum Murrill 121
Sequoiae Murrill 119
sessile Murrill 120
stipitatum Murrill 122
subfornicatum Murrill 121
subincrustatum Murrill 122
sulcatum Murrill 120
Tsugae Murrill 118
tuberculosum Murrill 123
zonatum Murrill 120
Geopetalum 298
abietinum (Schrad.) Murrill 300
albescens Murrill 299
alliaceum (Berk. & Curt.) Murrill 300
angustatum (Berk.) Murrill 300
betulinum (Peck) Murrill 301
Blakei (Berk. & Curt.) Murrill 298
candidissimum (Berk. & Curt.) Murrill 298
catephes (Berk.) Murrill 302
copulatum (Ehrenb.) Murrill 302
densifolium Murrill 301
flavolanatum (Berk. & Curt.) Murrill 302
geophilum Murrill 299
haedinum (Berk. & Curt.) Murrill 301
inconspicuum (Massee) Murrill 301
oregonense Murrill 299
petaloides (Bull.) Pat. 300
semicaptum (Berk. & Curt.) Murrill 299
semitectum (Berk. & Curt.) Murrill 302
septicum (Fries) Murrill 299
subelatinum Murrill 301
subhaedinum Murrill 302
tremelliforme Murrill 302
Globifomes 112
graveolens (Schw.) Murrill 112
Gloeophyllum 128
abietinellum Murrill 129
Berkeleyi (Sacc.) Murrill 130
hirsutum (Schaeff.) Murrill 130
striatum (Sw.) Murrill 129
trabeum (Pers.) Murrill 129
Grifola 68
Berkeleyi (Fries) Murrill 69
fractipes (Berk. & Curt.) Murrill 69
frondosa (Dicks.) S. F. Gray 69
poripes (Fries) Murrill 68
ramosissima (Scop.) Murrill 69
Sumstinei Murrill 68
Gymnopus 352
acervatus (Fries) Murrill 362
agricola Murrill 360
albidulus (Pat.) Murrill 370
albipilatus (Peck) Murrill 366
albogriseus (Peck) Murrill 368
albus (Peck) Murrill 355
alcalinolens (Peck) Murrill 367
atratoides (Peck) Murrill 363
atratus (Fries) Murrill 364
avellaneidiscus Murrill 369
avellaneigriseus Murrill 369
badiialbus Murrill 369
Boryanus (Berk. & Mont.) Murrill 370
carnosus (Curt.) Murrill 358
chrysopeplus (Berk. & Curt.) Murrill 359
cinchonensis Murrill 372
conigenoides (Ellis) Murrill 356
cremeimelleus Murrill 368

Gymnopus
cremoraceus (Peck) Murrill 359
cyanocephalus (Pat.) Murrill 372
delicatellus (Peck) Murrill 354
densifolius Murrill 371
dentatus Murrill 366
denticulatus Murrill 368
detersibilis (Berk. & Curt.) Murrill 363
discipes (Clements) Murrill 364
domesticus Murrill 371
dryophilus (Bull.) Murrill 362
Earleae Murrill 364
Eatonae Murrill 356
expallens (Peck) Murrill 363
exsculptus (Fries) Murrill 359
familia (Peck) Murrill 365
farinaceus Murrill 357
fimetarius Murrill 372
flavescens Murrill 357
fuliginellus (Peck) Murrill 366
fulvidiscus Murrill 368
fulvipes Murrill 369
fuscolilacinus (Peck) Murrill 364
Glatfelteri Murrill 358
griseifolius Murrill 370
hygrophoroides (Peck) Murrill 362
ignobilis (P. Karst.) Murrill 364
jamaicensis Murrill 373
lachnophyllus (Berk.) Murrill 360
lentinoides (Peck) Murrill 360
ludovicianus Murrill 355
luxurians (Peck) Murrill 362
marasmiiformis Murrill 371
maurus (Fries) Murrill 363
microspermus (Peck) Murrill 361
microsporus (Peck) Murrill 355
monticola Murrill 371
musicola Murrill 370
myriadophyllus (Peck) Murrill 363
nigrita (Berk. & Curt.) Murrill 373
nigritiformis Murrill 371
nigrodiscus (Peck) Murrill 356
oculatus Murrill 371
oculus (Peck) Murrill 367
orizabensis Murrill 370
pallidus Murrill 355
physcopodius (Mont.) Murrill 358
pilularius (Mont.) Murrill 365
platyphyllus (Pers.) Murrill 367
radicatus (Relhan) Murrill 366
roseilividus Murrill 373
rugosoceps (Atk.) Murrill 360
setulosus Murrill 373
sinuatus Murrill 357
squamiger Murrill 356
strictipes (Peck) Murrill 357
subavellaneus Murrill 372
subflavescens Murrill 373
subflavifolius Murrill 359
sublatericius Murrill 369
subnivulosus Murrill 372
subrugosus Murrill 368
subsulphureus (Peck) Murrill 359
tenuifolius Murrill 358
tenuipes (Schw.) Murrill 361
texensis (Berk. & Curt.) Murrill 356
tortipes Murrill 361
trullisatus Murrill 367
tuberosus (Bull.) Murrill 355
Gymnopus
umbonatus (Peck) Murrill 369
unakensis Murrill 366
uniformis (Peck) Murrill 365
velutipes (Curt.) Murrill 361
virginianus Murrill 357
Volkertii Murrill 365
xuchilensis Murrill 373
Gyroporus 133
castaneus (Bull.) Quél. 134
cyanescens (Bull.) Quél. 133
subalbellus Murrill 134
Hapalopilus 80
gilvus (Schw.) Murrill 81
licnoides (Mont.) Murrill 81
rutilans (Pers.) Murrill 80
sublilacinus (Ellis & Ev.) Murrill 80
Heliomyces 247
angustifolius Murrill 249
decolorans Berk. & Curt. 249
foetens Pat. 249
hondurensis Murrill 248
multifolius Murrill 249
Peckii Murrill 248
rubritinctus Murrill 249
striatus Murrill 248
subavellaneus Murrill 248
subspodoides Murrill 248
terrestris Murrill 247
translucens Murrill 247
Hexagona 47
alveolaris (DC.) Murrill 48
brunneola (Berk. & Curt.) Murrill 52
caperata (Pat.) Murrill 51
cucullata (Mont.) Murrill 52
daedalea (Link) Murrill 49
floridana Murrill 49
fragilis Murrill 50
hondurensis Murrill 51
indurata (Berk.) Murrill 52
Maxoni Murrill 49
portoricensis Murrill 51
princeps (Berk. & Curt.) Murrill 48
pseudoprinceps Murrill 49
purpurascens (Berk. & Curt.) Murrill 51
reniformis Murrill 50
striatula (Ellis & Ev.) Murrill 48
subcaperata Murrill 50
subpurpurascens Murrill 51
tessellatula Murrill 50
Hiatula 309 (See p. 425)
Benzonii (Fries) Sacc. 310
ciliatula (Fries) Sacc. 309
discreta (Fries) Sacc. 309
minima Berk. 309
purpurascens Berk. & Curt. 310
Hydnoporia 3
fuscescens (Schw.) Murrill 3
Hydrocybe 376
aurantia Murrill 383
bella (Massee) Murrill 384
californica Murrill 382
ceracea (Wulfen) P. Karst. 378
chlorophana (Fries) P. Karst. 378
conica (Scop.) P. Karst. 379
constans Murrill 382
cuspidata (Peck) Murrill 379
Davisii (Peck) Murrill 382
Earlei Murrill 384

Hydrocybe
flammea (Scop.) Murrill 381
flavolutea Murrill 383
hondurensis Murrill 383
immutabilis (Peck) Murrill 382
laeta (Pers.) P. Karst. 380
laricina (Peck) Murrill 380
lurida (Berk. & Curt.) Murrill 381
marginata (Peck) Murrill 378
miniata (Scop.) Murrill 380
minutula (Peck) Murrill 380
nitida (Berk. & Curt.) Murrill 378
nivea (Scop.) Murrill 377
parvula (Peck) Murrill 378
Peckii (Atk.) Murrill 379
psittacina (Schaeff.) P. Karst. 380
punicea (Fries) P. Karst. 381
pura (Peck) Murrill 377
pusilla (Peck) Murrill 377
rosea Murrill 382
ruber (Peck) Murrill 379
subcaespitosa Murrill 384
subflavida Murrill 383
subminiata Murrill 383
trojana Murrill 383
Hygrophorus 390
flavodiscus Frost & Peck 392
fragrans Murrill 394
glutinosus Peck 392
hypothejus Fries 394
jozzolus (Scop.) Murrill 391
Laurae Morgan 392
montanus Murrill 395
mugnaius (Scop.) Murrill 391
paludosus Peck 393
pudorinus Fries 393
roseibrunneus Murrill 394
serotinus Peck 392
sordidus Peck 391
speciosus Peck 393
subpratensis Murrill 395
subviolaceus Peck 393
variicolor Murrill 394
virgatulus Peck 393
Inonotus 86
amplectens Murrill 89
corrosus Murrill 89
dryadeus (Fries) Murrill 86
dryophilus (Berk.) Murrill 87
fruticum (Berk. & Curt.) Murrill 89
fulvomelleus Murrill 87
hirsutus (Scop.) Murrill 86
jamaicensis Murrill 88
juniperinus Murrill 88
perplexus (Peck) Murrill 88
pertenuis Murrill 87
pusillus Murrill 87
radiatus (Sow.) P. Karst. 90
texanus Murrill 88
Wilsonii Murrill 89
Irpiciporus 15
cubensis (Berk. & Curt.) Murrill 15
lacteus (Fries) Murrill 15
mollis (Berk. & Curt.) Murrill 15
Ischnoderma 82
fuliginosum (Scop.) Murrill 82
Lactaria 172
affinis Peck 180
agglutinata Burl. 182
Lactaria
alpina Peck 191
aspidea Fries 184
aspideoides Burl. 184
atroviridis Peck 178
Bensleyae Burl. 193
camphorata (Bull.) Fries 198
Chelidonium Peck 186
chrysorhea Fries 188
cilicioides Fries 179
cinerea Peck 190
circellata Fries 181
colorascens Peck 188
corrugis Peck 197
crocea Burl. 185
deceptiva Peck 177
delicata Burl. 185
deliciosa (L.) Fries 186
Gerardii Peck 195
glaucescens Crossl. 176
glyciosma Fries 193
grisea Peck 192
helva Fries 191
Hibbardae Peck 193
hygrophoroides Berk. & Curt. 196
hysgina Fries 181
ichorata (Batsch) Fries 196
indigo (Schw.) Fries 187
insulsa Fries 180
involuta Soppitt 177
isabellina Burl. 199
lactiflua (L.) Burl. 195
lanuginosa Burl. 182
ligniota Fries 194
lividorubescens (Batsch) Burl. 184
luteola Peck 197
maculata Peck 185
minuscula Burl. 189
mucida Burl. 181
mutabilis Peck 199
nitida Burl. 189
oculata (Peck) Burl. 189
paludinella Peck 189
parva Peck 190
Peckii Burl. 191
pergamena (Sw.) Fries 176
piperata (L.) Pers. 176
plinthogala (Otto) Burl. 194
quieta Fries 188
representanea Britz. 183
resima Fries 179
rimosella Peck 198
rufa (Scop.) Fries 192
rufula Peck 192
rusticana (Scop.) Burl. 178
salmonea Peck 195
scrobiculata (Scop.) Fries 179
seriflua (DC.) Fries 199
speciosa Burl. 183
subdulcis (Pers.) Fries 198
subpurpurea Peck 187
subtomentosa Berk. & Rav. 195
subvellerea Peck 177
subvelutina Peck 197
Sumstinei Peck 194
theiogala (Bull.) Fries 187
torminosa (Schaeff.) Pers. 178
trivialis Fries 181
turpis (Weinm.) Fries 183

Lactaria
varia Peck 190
vellerea Fries 177
Laetiporus 72
speciosus (Batt.) Murrill 72
Lentinellus 295
cornucopioides (Bolt.) Murrill 295
Lentinula 295
detonsa (Fries) Murrill 295
Lentinus 288
albellus Pat. 291
carneotomentosus (Batsch) Schroet. 289
crinitus (L.) Fries 291
graminicola Murrill 290
hirtiformis Murrill 293
hirtus (Fries) Murrill 293
levis (Berk. & Curt.) Murrill 293
orizabensis Murrill 290
pyramidatus Berk. & Curt. 291
scyphoides Pat. 290
strigellus Berk. & Curt. 292
strigosus (Schw.) Fries 292
suavissimus Fries 289
subscyphoides Murrill 290
sulcatus Berk. 291
tubarius Pat. 291
umbilicatus Peck 289
velutinus Fries 292
Lentodiellum 297
concavum (Berk.) Murrill 297
Lentodium 296
squamosum (Schaeff.) Murrill 296
tigrinum (Bull.) Earle 296
Lenzites 127
betulina (L.) Fries 127
betuliniformis Murrill 128
cubensis Berk. & Curt. 128
Earlei Murrill 128
Marasmiellus 243
inconspicuus Murrill 243
juniperinus Murrill 243
purpureus (Berk. & Curt.) Murrill 244
Marasmius 250
aciculaeformis Berk. & Curt. 259
albiceps Peck 283
albofuscus Berk. & Curt. 263
alienus Peck 279
alliatus (Schaeff.) Schroet. 281
androsaceus (L.) Fries 284
archyropus (Pers.) Fries 270
atropurpureus Murrill 262
atroviridis Berk. & Curt. 261
badiceps Peck 279
badius Berk. & Curt. 267
bahamensis Murrill 265
bellipes Morgan 282
bermudensis Berk. 255
Berteroi (Lév.) Murrill 267
biformis Peck 274
calopus (Pers.) Fries 282
capillaris Morgan 283
caricicola C. H. Kauffman 277
caryophylleus (Schaeff.) Schroet. 271
castaneicolor Pennington 274
cervinicolor Murrill 265
chrysochaetes Berk. & Curt. 255
cinereialbus Murrill 264
clitocybiformis P. Henn. 263
colimensis Murrill 261
Marasmius
concinnus Ellis & Ev. 281
confluens (Pers.) Ricken 269
contrarius Peck 274
Copelandi Peck 273
coracicola Berk. & Curt. 265
coracipes Berk. & Curt. 268
Crescentiae Murrill 259
cubensis Berk. & Curt. 263
cucullatus Ellis 280
curtipes Murrill 268
cyathiformis Berk. & Curt. 268
delectans Morgan 281
dichrous Berk. & Curt. 272
Earlei Murrill 258
elongatipes Peck 274
fasciatus Pennington 270
felix Morgan 279
fibrosipes Berk. & Curt. 266
filopes Peck 280
flavellus (Berk. & Curt.) Murrill 256
foetidus (Sow.) Fries 273
fuscopurpureus (Pers.) Fries 272
glabellus Peck 282
glaucopus (Pat.) Sacc. & D. Sacc. 268
glebigenus Fries 258
graminis Murrill 259
graminum (Libert) Berk. & Br. 283
guyanensis Mont. 256
haematocephalus (Mont.) Berk. & Curt. 267
Harrisii Murrill 264
hemileucus (Berk. & Curt.) Murrill 266
hinnuleiformis Murrill 263
hinnuleus Berk. & Curt. 259
Hiorami Murrill 256
hondurensis Murrill 258
inaequalis Berk. & Curt. 256
insititius Fries 278
iocephalus (Berk. & Curt.) Pennington 271
ionides Pat. 268
jalapensis Murrill 264
jamaicensis Murrill 261
Johnstonii Murrill 269
languidus (Lasch) Fries 276
leptopus Peck 279
magnisporus Murrill 275
Marbleae Murrill 255
melanopus Morgan 284
minutissimus Peck 280
minutus Peck 280
montanus Murrill 266
multifolius Peck 270
musicola Murrill 260
nanus Massee 256
nigripes (Schw.) Fries 277
niveicolor Murrill 257
obsoletus Murrill 265
Olneii Berk. & Curt. 280
opacus Berk. & Curt. 278
pallescens Murrill 261
papillatus Peck 276
paucifolius Murrill 262
Peckii Murrill 254
perforans (Hoffm.) Fries 277
peronatus (Bolt.) Fries 271
personatus Berk. & Curt. 259
petiolorum Berk. & Curt. 255

Marasmius
phyllophilus Peck 278
picipes Murrill 260
plicatulus Peck 282
polyphyllus Peck 269
polyporoides Murrill 266
portoricensis Murrill 262
praeacutus Ellis 277
praedecurrens Murrill 257
praetortipes Murrill 258
prasiosmus Fries 269
proletarius Berk. & Curt. 256
pruinosifolius Murrill 265
pruinosulus Murrill 258
pulcherripes Peck 284
purpurascens Berk. & Curt. 267
putredinis Berk. & Curt. 265
pyrinus Ellis 281
ramealis (Bull.) Fries 279
ramulinus Peck 278
resinosus (Peck) Sacc. 276
rotula (Scop.) Fries 282
rubrophyllus Pennington 271
rugulosus Berk. & Curt. 260
salignus Peck 276
semihirtipes Peck 274
sericipes Berk. & Curt. 268
setulosipes Murrill 257
siccus (Schw.) Fries 283
soliformis Murrill 261
spongiosus Berk. & Curt. 272
squamula (Batsch) Pennington 277
stenophyllus Mont. 262
straminipes Peck 283
stylobates Berk. & Curt. 257
subcyathiformis Murrill 269
subglobosus Berk. & Curt. 256
subnudus (Ellis) Peck 271
subpilosus Peck 275
subplexifolius Murrill 263
subpruinosus Murrill 266
subrotula Murrill 259
subtenerrimus Murrill 255
subtomentosus Peck 275
sulcatipes Murrill 259
Sutliffae Peck 273
synodicus (Kunze) Fries 257
tageticolor Berk. 267
tenebrarum Berk. & Curt. 260
theobromicola Murrill 255
thujinus Peck 281
tomentosipes Peck 278
tortipes Berk. & Curt. 264
trojanus Murrill 263
trullisatipes Peck 273
umbonatus Peck 273
Underwoodii Murrill 260
velutipes Berk. & Curt. 275
vialis Peck 276
viridifuscus Berk. & Curt. 264
washingtonensis Pennington 270
Wilsonii Murrill 261
Melanoporella 14
carbonacea (Berk. & Curt.) Murrill 14
Melanoporia 14
nigra (Berk.) Murrill 15
Micromphale 307
abscondens (Peck) Murrill 307
badium Murrill 308
Micromphale
brunnescens Earle 308
elongatipes (Peck) Murrill 307
fulvifibrillosum Murrill 307
fuscifrons (Berk. & Curt.) Murrill 308
subexcavatum Murrill 308
ulmarium (Bull.) Murrill 307
Microporellus 52
dealbatus (Berk. & Curt.) Murrill 53
holotephrus (Berk. & Curt.) Murrill 53
porphyritis (Berk.) Murrill 53
unguicularis (Fries) Murrill 53
Monadelphus 420
caespitosus (Berk.) Murrill 420
illudens (Schw.) Earle 421
marginatus (Peck) Murrill 421
revolutus (Peck) Murrill 420
sphaerosporus (Peck) Murrill 421
Nigrofomes 112
melanoporus (Mont.) Murrill 112
Nigroporus 85
vinosus (Berk.) Murrill 85
Omphalina 344
acuminata Murrill 349
buccinalis (Batsch) Murrill 345
chondripes (Berk. & Curt.) Murrill 350
chrysophylla (Fries) Murrill 346
coccinea Murrill 350
collybiiformis Murrill 349
cremea Murrill 350
cuspidatella Murrill 349
Dawsonii Murrill 345
Earlei Murrill 350
epichysium (Pers.) Quél. 347
eximia (Peck) Murrill 345
flavella (Berk. & Curt.) Murrill 349
hypobrunnea Murrill 348
incarnata Murrill 351
jalapensis Murrill 349
lenta Murrill 349
lilacifolia (Peck) Murrill 346
luteicolor Murrill 348
miniata Murrill 350
niveicolor Murrill 348
rustica (Fries) Quél. 347
Sequoiarum Murrill 347
strombodes (Berk. & Mont.) Murrill 346
subcartilaginea Murrill 345
subclavata (Peck) Murrill 347
subhepatica (Batsch) Murrill 346
subscyphoides Murrill 348
tepeitensis Murrill 348
umbellifera (L.) Quél. 345
Volkertii Murrill 347
Omphalopsis 310
albidula (Peck) Murrill 312
aurantiaca (Peck) Murrill 315
Austini (Peck) Murrill 312
Bakeri Murrill 315
californiensis Murrill 315
campanella (Batsch) Earle 313
centenaria (Berk. & Curt.) Murrill 312
citricolor (Berk. & Curt.) Murrill 316
clavata (Peck) Murrill 313
convexa Murrill 316
corticola (Peck) Murrill 312
cuticolor Murrill 317
distantifolia Murrill 315
euspeirea (Berk. & Curt.) Murrill 316

Omphalopsis
fibula (Bull.) Murrill 314
fibuloides (Peck) Murrill 313
immaculata (Peck) Murrill 312
McMurphyi Murrill 315
myceniformis Murrill 316
olivaria (Peck) Murrill 314
papillata (Peck) Murrill 311
petasiformis Murrill 316
praedecurrens Murrill 314
pseudogrisea Murrill 314
pusillissima (Peck) Murrill 311
Rhododendri (Peck) Murrill 311
roriduliformis Murrill 317
serotina (Peck) Murrill 314
subavellanea Murrill 317
subimmaculata Murrill 315
translucentipes Murrill 312
turbinata Murrill 313
Panellus 244
cantharelloides Mont. 245
dealbatus (Berk.) Murrill 245
eugrammus (Mont.) Murrill 245
flabellatus Murrill 245
haematopus (Berk.) Murrill 246
jalapensis Murrill 244
stypticus (Bull.) P. Karst. 244
subcantharelloides Murrill 245
ursinus (Fries) Murrill 246
vulpinus (Sow.) Murrill 246
Phaeolopsis 73
Verae-Crucis (Berk.) Murrill 73
Phaeolus 90
sistotremoides (Alb. & Schw.) Murrill 90
Piptoporus 44
suberosus (L.) Murrill 44
Pleurotopsis 238
arachnoidea (Berk. & Curt.) Murrill 238
asperifolia (Pat.) Murrill 239
calospora (Pat.) Murrill 238
liliputiana (Mont.) Murrill 239
niduliformis Murrill 238
Plicatura 163
faginea (Schrad.) P. Karst. 164
flabelliformis (Berk. & Rav.) Murrill 164
guadelupensis (Pat.) Murrill 164
lateritia (Berk. & Curt.) Murrill 164
nivea (Fries) P. Karst. 163
Plicaturella 172
olivacea (Schw.) Murrill 172
Pogonomyces 84
hydnoides (Sw.) Murrill 84
Polymarasmius 286
multiceps (Berk. & Curt.) Murrill 286
sarmentosus (Berk.) Murrill 286
submulticeps Murrill 286
Polyozellus 171
multiplex (Underw.) Murrill 171
Polyporus 54
acicula Berk. & Curt. 57
admirabilis Peck 57
aemulans Berk. & Curt. 59
albiceps Peck 58
arcculariellus Murrill 59
arcculariformis Murrill 59
arcularius (Batsch) Fries 59
Blanchetianus Berk. & Mont. 63
caudicinus (Scop.) Murrill 60
columbiensis Berk. 58
Polyporus
Cowellii Murrill 60
craterellus Berk. & Curt. 57
delicatus Berk. & Curt. 56
diabolicus Berk. 62
dibaphus Berk. & Curt. 56
discoideus Berk. & Curt. 57
elegans (Bull.) Fries 62
fagicola Murrill 55
fissus Berk. 62
humilis Peck 58
hydniceps Berk. & Curt. 55
maculosus Murrill 61
marasmioides (Pat.) Murrill 61
obolus Ellis & Macbr. 58
phaeoxanthus Berk. & Mont. 58
Polyporus (Retz.) Murrill 56
scabellus (Pat.) Murrill 63
scabriceps Berk. & Curt. 56
subelegans Murrill 62
Tricholoma Mont. 60
tuba Berk. & Curt. 57
Underwoodii Murrill 61
variiporus Murrill 60
virgatus Berk. & Curt. 56
Wrightii Murrill 61
Porodaedalea 111
Pini (Thore) Murrill 111
Porodisculus 47
pendulus (Schw.) Murrill 47
Poronidulus 16
conchifer (Schw.) Murrill 16
Prunulus 319
Abramsii Murrill 338
acutoconicus (Clements) Murrill 330
adirondackensis Murrill 332
albogriseus (Peck) Murrill 327
alcaliniformis Murrill 331
alphitophorus (Berk.) Murrill 339
amabillissimus (Peck) Murrill 324
argillaceus Murrill 341
atribrunneus Murrill 329
atridiscus Murrill 334
atroalboides (Peck) Murrill 329
atroumbonatus (Peck) Murrill 335
aurantiacus Murrill 336
aurantiidiscus Murrill 336
avellaneigriseus Murrill 340
avellaneus Murrill 329
brevipes Murrill 328
caesiialbus Murrill 337
caesius (Peck) Murrill 327
capillaripes (Peck) Murrill 328
carbonicola Murrill 341
cervinialbus Murrill 326
cinchonensis Murrill 341
cinereiavellaneus Murrill 340
clavicularis (Fries) Murrill 330
collybiiformis Murrill 335
connatipes (Berk. & Curt.) Murrill 326
constans (Peck) Murrill 327
corrugatus (Pat.) Murrill 342
corticalis (Bull.) Murrill 328
crystallinus (Peck) Murrill 322
curvipes (Peck) Murrill 329
cyaneobasis (Peck) Murrill 323
cymbaliferus (Mont.) Murrill 331
delectabilis (Peck) Murrill 323
denticulatus (Bolt.) S. F. Gray 332

Prunulus
elegantulus (Peck) Murrill 337
epipterygius (Scop.) Murrill 335
farinaceus Murrill 326
flavicitrinus Murrill 336
flavifolius (Peck) Murrill 324
fuliginosus Murrill 335
fumosiavellaneus Murrill 340
fusipes Murrill 337
galericulatus (Scop.) Murrill 336
gracillipes Murrill 340
Grantii Murrill 338
hemisphaericus (Peck) Murrill 329
intertextus (Berk. & Curt.) Murrill 328
latericius Murrill 342
latifolius (Peck) Murrill 327
Leaianus (Berk.) Murrill 333
lepiotiformis Murrill 322
leptophyllus (Peck) Murrill 325
leucophaeus Murrill 336
ligniarius (Peck) Murrill 333
longipes Murrill 338
ludovicianus Murrill 330
luteopallens (Peck) Murrill 325
magnus Murrill 338
margarita Murrill 340
meliigena (Berk. & Cooke) Murrill 324
melleidiscus Murrill 325
minutissimus Murrill 326
miratus (Peck) Murrill 327
murinus Murrill 331
myceliosus Murrill 338
Myrciae (Pat.) Murrill 339
niveipes Murrill 332
occidentalis Murrill 337
ochraceicinereus Murrill 333
odorifer (Peck) Murrill 324
paludicola Murrill 336
paluster (Peck) Murrill 331
parvulus Murrill 323
pectinatus Murrill 333
plumbeibrunneus Murrill 338
praelongus (Peck) Murrill 330
pubescens Murrill 341
pulcherrimus (Peck) Murrill 326
purpureofuscus (Peck) Murrill 333
purus (Pers.) Murrill 332
radicatellus (Peck) Murrill 323
roridulus (Berk. & Curt.) Murrill 339
roseipallens Murrill 324
roseocandidus (Peck) Murrill 323
roseolus Murrill 324
rugosoides (Peck) Murrill 334
rutilantiformis Murrill 334
Sabali Murrill 325
scabripes Murrill 331
semivestipes (Peck) Murrill 334
splendidipes (Peck) Murrill 330
strobilinoides (Peck) Murrill 337
subfumosus Murrill 328
subincarnatus (Peck) Murrill 325
subpulverulentus Murrill 339
subtenuipes Murrill 334
syringeus Murrill 341
tenerrimus (Berk.) Murrill 322
tenuiculus Murrill 334
testaceus Murrill 341
trojanus Murrill 339
vexans (Peck) Murrill 329
Prunulus
viridigriseus Murrill 340
vulgaris (Pers.) Murrill 326
Pulveroboletus 156
Ravenelii (Berk. & Curt.) Murrill 157
Pycnoporellus 70
fibrillosus (P. Karst.) Murrill 70
Pycnoporus 71
cinnabarinus (Jacq.) P. Karst. 71
sanguineus (L.) Murrill 71
Pyropolyporus 101
Baccharidis (Pat.) Murrill 108
Bakeri Murrill 104
calcitratus (Berk. & Curt.) Murrill 110
Calkinsii Murrill 105
Cedrelae Murrill 105
conchatus (Pers.) Murrill 108
dependens Murrill 106
Earlei Murrill 107
Everhartii (Ellis & Gall.) Murrill 103
extensus (Lév.) Murrill 110
fulvus (Scop.) Murrill 103
grenadensis Murrill 107
Haematoxyli Murrill 111
igniarius (L.) Murrill 103
inflexibilis (Berk.) Murrill 104
jamaicensis Murrill 107
juniperinus (Schrenk) Murrill 106
Langloisii Murrill 109
linteus (Berk. & Curt.) Murrill 109
praerimosus Murrill 105
pseudosenex Murrill 107
Ribis (Schum.) Murrill 108
Robiniae Murrill 105
Robinsoniae Murrill 108
roseocinereus Murrill 104
sarcitus (Fries) Murrill 110
sublinteus Murrill 110
subpectinatus Murrill 109
texanus Murrill 104
Underwoodii Murrill 106
yucatanensis Murrill 106
Resupinatus 240
applicatus (Batsch) S. F. Gray 242
approximans (Peck) Murrill 241
atrocoeruleus (Fries) Murrill 240
atropellitus (Peck) Murrill 243
campanulatus (Peck) Murrill 241
cubensis Murrill 240
griseus (Peck) Murrill 240
niger (Schw.) Murrill 242
orizabensis Murrill 241
striatulus (Pers.) Murrill 242
subbarbatulus Murrill 241
subbarbatus (Berk. & Curt.) Murrill 242
violaceofulvens (Batsch) Murrill 241
Rigidoporus 45
contrarius (Cooke) Murrill 46
evolutus (Berk. & Curt.) Murrill 45
Liebmanni (Fries) Murrill 46
microstomus (Berk. & Curt.) Murrill 45
substereinus Murrill 46
surinamensis (Miq.) Murrill 46
Rostkovites 153
granulatus (L.) P. Karst. 153
hirtellus (Peck) Murrill 154
subaureus (Peck) Murrill 154
Russula 201
abietina Peck 231

Russula
aeruginea Lindblad 223
albella Peck 233
albida Peck 224
albidula Peck 216
alutacea (Pers.) Fries 231
anomala Peck 219
astringens Burl. 227
atropurpurea Peck 212
atroviolacea Burl. 220
aurantialutea C. H. Kauffman 220
Ballouii Peck 212
basifurcata Peck 216
betulina Burl. 227
bicolor Burl. 234
bifida (Bull.) Schroet. 215
Blackfordae Peck 230
blanda Burl. 213
borealis C. H. Kauffman 220
brunneola Burl. 233
chamaeleontina Fries 231
compacta Frost & Peck 205
consobrina Fries 217
corallina Burl. 213
corinthiirubra Burl. 220
cremoricolor Earle 208
crenulata Burl. 235
crustosa Peck 209
cyanoxantha (Schaeff.) Fries 217
decolorans Fries 225
delica Fries 207
densifolia (Secr.) Gill. 206
Earlei Peck 217
eccentrica Peck 207
emetica (Schaeff.) Pers. 234
expallens Gill. 221
fallax Fries 235
fingibilis Britz. 224
flava Lönnegren 226
flaviceps Peck 225
flavida Frost & Peck 211
flocculosa Burl. 213
foetens (Pers.) Fries 214
fulvescens Burl. 229
glauca Burl. 222
gracilis Burl. 222
graminicolor Quél. 223
granulata Peck 214
heterophylla Fries 216
humidicola Burl. 230
insignis Burl. 212
integra (L.) Fries 228
lactea (Pers.) Fries 209
lepida Fries 208
lutea (Huds.) Fries 224
luteobasis Peck 227
magnifica Peck 205
Mariae Peck 210
maxima Burl. 229
melliolens Quél. 228
mexicana Burl. 222
modesta Peck 210
Morgani Sacc. 208
Murrillii Burl. 211
mustelina Fries 208
nauseosa (Pers.) Fries 232
nigrescentipes Peck 226
nigricans (Bull.) Fries 206
nigrodisca Peck 235
obscura Romell 225
ochroleuca Pers. 218
ochrophylla Peck 228
palustris Peck 222
parvula Burl. 235
paxilloides Earle 218
pectinata Fries 213
pectinatoides Peck 214
polyphylla Peck 207
puellaris Fries 230
pulverulenta Peck 215
purpurina Quél. 232
pusilla Peck 229
Queletii Fries 218
Raoultii Quél. 218
Robinsoniae Burl. 221
roseipes (Secr.) Bres. 227
rubescens Beardslee 226
rubriochracea Murrill 211
rubrotincta (Peck) Burl. 229
rugulosa Peck 234
sanguinea (Bull.) Fries 221
sericeonitens C. H. Kauffman 233
serissima Peck 212
simillima Peck 219
sordida Peck 206
sphagnophila C. H. Kauffman 230
stricta Murrill 224
subalutacea Burl. 227
subdepallens Peck 226
subfragilis Burl. 233
subolivascens Burl. 223
subsordida Peck 206
subusta Burl. 207
subvelutina Peck 210
sulcatipes Murrill 225
tenuiceps C. H. Kauffman 219
Turci Bres. 232
uncialis Peck 232
variata Banning & Peck 216
ventricosipes Peck 215
veternosa Fries 219
vinacea Burl. 217
virescens (Schaeff.) Fries 209
viridella Peck 210
xerampelina (Schaeff.) Fries 208
Schizophyllus 237
alneus (L.) Schroet. 237
Scutiger 64
caeruleoporus (Peck) Murrill 66
cryptopus (Ellis & Barth.) Murrill 65
decurrens (Underw.) Murrill 65
Ellisii (Berk.) Murrill 64
griseus (Peck) Murrill 67
holocyaneus (Atk.) Murrill 66
laeticolor Murrill 65
persicinus (Berk. & Curt.) Murrill 67
radicatus (Schw.) Murrill 66
retipes (Underw.) Murrill 65
subradicatus Murrill 66
Whiteae Murrill 67
Scytinotus 239
concolor (Berk. & Curt.) Murrill 239
distantifolius Murrill 239
haematodes (Berk. & Curt.) Murrill 239
Spongipellis 37
borealis (Fries) Pat. 38
delectans (Peck) Murrill 38

Spongipellis
fissilis (Berk. & Curt.) Murrill 39
galactinus (Berk.) Pat. 39
hydrophilus (Berk. & Curt.) Murrill 39
luridescens Murrill 39
occidentalis Murrill 38
substuppeus (Berk. & Cooke) Murrill 40
unicolor (Schw.) Murrill 37
Spongiporus 29
altocedronensis Murrill 30
leucospongia (Cooke & Hark.) Murrill 29
Strobilomyces 157
strobilaceus (Scop.) Berk. 157
Suillellus 151
Eastwoodiae Murrill 152
Frostii (Russell) Murrill 152
luridus (Schaeff.) Murrill 151
Morrisii (Peck) Murrill 153
rubinellus (Peck) Murrill 152
Tectella 247
patellaris (Fries) Murrill 247
Tinctoporia 14
aurantiotingens (Ellis & Macbr.) Murrill 14
Tomophagus 30
colossus (Fries) Murrill 30
Trametes 42
cubensis (Mont.) Sacc. 43
havannensis (Berk. & Curt.) Murrill 44
lignea Murrill 44
nivosa (Berk.) Murrill 42
robiniophila Murrill 42
suaveolens (L.) Fries 43
submurina Murrill 43
subnivosa Murrill 43
Trichaptum 79
trichomallum (Berk. & Mont.) Murrill 79
Trogia 166
cinerea Pat. 166
Tylopilus 134
alboater (Schw.) Murrill 135
felleus (Bull.) P. Karst. 134
gracilis (Peck) P. Henn. 135
indecisus (Peck) Murrill 135
Tyromyces 30
albogilvus (Berk. & Curt.) Murrill 36
anceps (Peck) Murrill 35
Bartholomaei (Peck) Murrill 35
caesius (Schrad.) Murrill 34
Calkinsii Murrill 32
cerifluus (Berk. & Curt.) Murrill 33
chioneus (Fries) P. Karst. 35
crispellus (Peck) Murrill 34
duracinus (Pat.) Murrill 37
Ellisianus Murrill 34
fulvitinctus (Berk. & Curt.) Murrill 36
guttulatus (Peck) Murrill 31
lacteus (Fries) Murrill 36
leucomallus (Berk. & Curt.)Murrill 36
nivosellus Murrill 32
obductus (Berk.) Murrill 32
Palmarum Murrill 32
palustris (Berk. & Curt.) Murrill 31
semipileatus (Peck) Murrill 35
semisupinus (Berk. & Curt.) Murrill 34
Smallii Murrill 32
Spraguei (Berk. & Curt.) Murrill 33
tiliophila Murrill 33
undosus (Peck) Murrill 34
versicutis (Berk. & Curt.) Murrill 33
Xerotinus 165
martinicensis (Pat.) Murrill 165
Mauryi (Pat.) Murrill 165

INDEX TO SPECIES

The specific name is made to correspond in gender with the first generic name under it, and the correct gender is understood for other generic names. Page numbers indicating place of description are in bold face type, and those indicating synonymy are in *italic*, while those in ordinary type refer to keys and incidental mention.

abietinellum
Gloeophyllum 129, **129**
abietinus
Agaricus *300*
Boletus *27*
Coriolus 18, **27**, 28
Geopetalum 298, **300**
Russula 204, **231**
Abietis
Fomes *111*
abortivus
Polyporus *64*
Abramsii
Prunulus 321, **338**
abscondens
Agaricus *307*
Micromphale 307, **307**, 308
Pleurotus *307*
abundans
Agaricus *367*
Collybia *367*
acerinus
Marasmius *273*
acervatus
Agaricus *362*
Collybia *362*
Gymnopus 353, **362**
acicula
Agaricus 342
Mycena 342
Polyporus 54, **57**
aciculaeformis
Marasmius 251, **259**
acidus
Boletus *155*
acris
Agaricus 176
Lactaria 200
actinobolus
Polystictus *23*
aculeatus
Marasmius 376

aculeifer
Funalia 78, **79**
Trametes *79*
acuminata
Omphalina 344, **349**
acutoconica
Mycena *330*
Prunulus 320, **330**
adirondackensis
Agaricus *401*
Clitocybe 396, **401**, 417
Prunulus 321, **332**
admirabilis
Polyporus 54, **57**
Adonis
Agaricus 342
Mycena 342
adustus
Agaricus 206, *207*, 207
Bjerkandera 40, **40**
Boletus *40*
Myriadoporus *40*
Polyporus 40, *40*
Russula *207*
aegerita
Polyporus 100
aemulans
Polyporus 54, **59**
aeruginascens
Boletus 156
aeruginea
Lactaria 200
Russula 203, **223**
Aesculi
Agaricus *126*
Daedalea 125, **126**
Polyporus *126*
Aesculi-flavae
Boletus *126*
afer
Xerotus 165
affinis
Boletus *142*
Ceriomyces 136, **142**
Lactaria 174, **180**, 200
agaricina
Onygena *166*
agaricoides
Asterosperma *166*
agglutinata
Lactaria 174, **182**
agricola
Gymnopus 353, **360**
alabamensis
Ceriomyces 137, **146**
Coriolus 17, **19**
albellus
Boletus *138*
Ceriomyces 136, **138**
Lentinus 289, **291**
Polyporus *35*
Russula 205, **233**
albescens
Geopetalum 298, **299**
albicastanea
Clitocybe *391*
albiceps
Marasmius 254, **283**
Polyporus 54, **58**
albida
Lactaria 200
Russula 204, **224**
albidula
Clitocybe 396, **400**
Collybia *370*
Gymnopus 354, **370**
Omphalia *312*
Omphalopsis 310, **312**
Russula 203, **216**
albidus
Boletus *34*
Daedalea *126*
albiformis
Clitocybe 397, **412**
albipes
Camarophyllus 385, **388**
Hygrophorus *388*
albipilata
Collybia *366*
Gymnopus 353, **366**, 375
albissima
Melanoleuca 417, 418, 419
alboater
Boletus *135*
Tylopilus 134, **135**
albo-cervinus
Coriolus *21*
Polyporus *21*
alboflavus
Agaricus *346*
Omphalia *346*
albofuscus
Marasmius 251, **263**
albogilvus
Polyporus *36*
Tyromyces 31, **36**
albogrisea
Collybia *368*
Fomes *99*
Gymnopus 353, **368**
Mycena *327*
Prunulus 320, **327**
alboluteus
Aurantiporellus **70**
Fomes *70*
Polyporus 70, *70*
albomarginatus
Marasmius 284
albostygia
Bjerkandera 40, **41**
Polyporus *41*
albo-umbilicatus
Agaricus *399*
Clitocybe *399*
albo-umbonatus
Camarophyllus 385, **390**
Hydrocybe *390*
Hygrophorus *390*
albus
Boletus *153*
Collybia *355*
Geopetalum *245*
Gymnopus 352, **355**
Hypophyllum *207*
alcaliniformis
Prunulus 319, 320, **331**, 342
alcalinolens
Collybia *367*

alcalinolens
Gymnopus 353, **367**
alcalinus
Agaricus 342
Mycena 342
alectorolophoides
Agaricus *169*
Chanterel 167, **169**
algidus
Agaricus 243
alienus
Marasmius 253, **279**
alliaceum
Geopetalum 298, **300**
Marasmius 284
Panus *300*, 303
alliatus
Agaricus *281*
Marasmius 254, **281**
alneus
Agaricus *237*, 237
Hyponevris *237*
Schizophyllus **237**
Alni
Plicatura 163, *163*
Trogia *163*
alnicola
Crinipellis 287, **288**
alphitophorus
Agar cus *339*
Mycena *339*
Prunulus 322, **339**
alphitophylla
Armillaria 390
alpina
Lactaria 175, **191**
altocedronensis
Fomitiporella 12, **12**
alutaceus
Agaricus *231*
Boletus *149*
Russula 204, **231**
Russulina *231*
alveolaris
Cantharellus *48*
Favolus *48*
Hexagona 47, **48**
Merulius *48*
alveolarius
Boletus 63
Polyporus 63
alveolatus
Boletus *152*
amabilipes
Marasmius *361*
amabilis
Boletus 154, **155**
amabillissimus
Agaricus *324*
Mycena *324*
Prunulus 320, 321, **324**, 342
amadelphus
Marasmius 284
amanitoides
Daedalea, 125, **127**
amarus
Agaricus 176
ambigua
Daedalea *126*
ambigua
Trametes *126*
americanus
Boletus *154*
Lentinus *289*
amictus
Agaricus 342
Mycena 342
amoena
Russula 235, 236
amplectens
Inonotus 86, **89**
ampliporus
Boletus *159*
amygdalinus
Hygrophorus *394*
Polyporus 63
Ananas
Boletellus **156**
Boletus 156, *156*
anax
Polyporus *69*
anceps
Polyporus *35*
Tyromyces 31, **35**
androsaceus
Agaricus *282*, *284*
Marasmius 254, **284**, 250
angustatum
Geopetalum 298, **300**
Panus *300*
angustifolius
Camarophyllus 385, **386**
Heliomyces 247, **249**
angustissimus
Agaricus 417
Clitocybe 417
anisarius
Agaricus *406*
anisatus
Lentinus *246*
annosus
Fomes 95, **97**
Fomitopsis *97*
Heterobasidium *97*
Polyporus *97*
annulatus
Boletus *155*
anomalus
Agaricus *300*
Marasmius *270*, 270
Russula 203, 218, **219**
anthiceps
Agaricus *316*
apertus
Agaricus *400*
Clitocybe 396, **400**
aplorutis
Chanterel *166*
appendiculatus
Boletinus 159, **160**
applanata
Daedalea *127*
Fomes 113
Lenzites *127*
Panus *245*
applicatus
Agaricus 240, *242*
Pleurotus *242*

applicatus
Resupinatus 240, **242**, 243
approximans
Pleurotus *241*
Resupinatus 240, **241**, 243
aquatica
Clitocybe *421*
aquiflua
Lactaria *191*
arachnoideus
Marasmius *238*
Pleurotopsis 238, **238**
archyropus
Agaricus *270*
Marasmius 252, **270**
arcticus
Polyporus 28
arcullariellus
Polyporus 55, **59**
arculariformis
Polyporus 55, **59**
arcularius
Boletus *59*
Polyporus 55, **59**
arenicola
Hydrocybe *394*
arenicolor
Coriolus *25*
Polyporus *25*
argentatus
Polyporus *71*
argillaceum
Ganoderma 118, **122**
Prunulus 322, **341**
armenicolor
Coriolus 17, **21**
Polyporus *21*
asema
Collybia 374, *375*
asperifolia
Crinipellis *239*
Pleurotopsis 238, **239**
aspideoides
Lactaria 174, **184**
aspideus
Agaricus *184*
Lactaria 174, **184**
asterophora
Nyctalis *166*
astringens
Russula 204, **227**
Atkinsoni
Boletus *142*
Atkinsonianus
Ceriomyces 136, **144**
atratoides
Agaricus *363*
Collybia *363*
Gymnopus 353, **363**
atratus
Agaricus *364*
Collybia *364*
Gymnopus 353, *364*
Polyporus *63*
atrialba
Clitocybe 398, **415**
atribrunneus
Prunulus 320, **329**
atridiscus
Prunulus 321, **334**
atroalboides
Agaricus *329*
Mycena *329*
Prunulus 320, **329**
atrocoeruleus
Agaricus *240*
Pleurotus *240*
Resupinatus 240, **240**, 243
atropellitus
Pleurotus *243*
Resupinatus 240, **243**
atropurpureus
Marasmius 251, **262**
Russula 202, **212**
atroumbonata
Mycena *335*
Prunulus 321, **335**
atroviolacea
Russula 203, **220**
atroviridis
Lactaria 174, **178**
Marasmius 251, **261**
Auberianus
Fomes 95, **100**, 100
Polyporus *100*
aurantiaco-luteus
Hygrophorus 384
aurantiacus
Agaricus *169*
Boletus *139*
Chanterel *169*
Leccinum *139*
Omphalia *315*
Omphalopsis 311, **315**
Polyporus *423*
Prunulus 321, **336**
aurantialutea
Russula 203, **220**
aurantiellus
Agaricus *361*
aurantiidiscus
Prunulus 321, **336**
aurantiotingens
Tinctoporia 14, **14**
aurantius
Hydrocybe 377, **383**
Hygrophorus *383*
aurata
Russula 235
auratocephalus
Agaricus **387**, 417
Camarophyllus 385, **387**, 390, 417
aureomarginatus
Polyporus *81*
aureo-nitens
Polyporus *90*
aureotomentosus
Pleurotus 376
auriflammeus
Boletus *141*
Ceriomyces 136, **141**
auripes
Boletus *142*
auriporus
Boletus *140*
Ceriomyces 136, **140**
Austini
Agaricus *312*
Omphalia *312*
Omphalopsis 310, **312**

australis
Fomes *115*
Ganoderma *115*
Polyporus *115*
avellaneialba
Clitocybe 398, **414**
avellaneidiscus
Gymnopus 354, **369**
avellaneigriseus
Gymnopus 354, **369**
Prunulus 322, **340**
avellaneus
Amauroderma 115, **116**
Prunulus 320, **329**
azonites
Agaricus *194*, 194
Lactariella *194*
azureus
Polystictus *18*
Baccharidis
Polyporus *108*
Pyropolyporus 102, **108**
badiceps
Boletus 150
Marasmius 254, **279**
badiialbus
Gymnopus 354, **369**
badius
Marasmius 252, **267,** *279*, 279
Micromphale 307, **308**
Polyporus 111
bahamensis
Marasmius 251, **265**
Bakeri
Boletus 150
Omphalopsis 311, **315**
Pyropolyporus 102, **104**
Ballouii
Russula 202, **212**
balsameus
Coriolus 17, **21**
Polyporus *21*
barbatulus
Agaricus *240*
Polystictus *25*
Bartholomaei
Polyporus *35*
Tyromyces 31, **35**
basidiosus
Camarophyllus 385, **389**
Clitocybe *389*
Hygrophorus *389*
basifurcata
Russula 203, **216**
Beatiei
Polyporus *69*
behringensis
Agaricus 317
Chanterel 167, **167**
Omphalia 317
bella
Hydrocybe 377, **384**
Hygrophorus *384*
bellipes
Marasmius 254, **282**
Bensleyae
Lactaria 175, **193**
benzoina
Trametes *82*
Benzonii
Agaricus *310*
Hiatula 425
Leptomyces 309, **310**
Berkeleyi
Boletinus 159, **159**
Daedalea *130*
Gloeophyllum 129, **130**
Grifola 68, **69**
Lenzites *127*
Polyporus *69*
Sesia *130*
Trametes *126*
bermudensis
Marasmius 250, **255**
Berteroi
Heliomyces *267*
Marasmius 251, **267**, 284
Bertieri
Agaricus *291*
Betula
Boletus *138*
Ceriomyces 136, **138**
betuliniformis
Lenzites 127, **128**
betulinus
Agaricus *127*
Boletus *44*
Daedalea 127, *127*
Fomitiporella 12, **12**
Geopetalum 298, **301**
Lenzites 127, **127**
Panus *301*
Piptoporus *44*
Russula 204, **227**
bicolor
Boletus *147*
Ceriomyces 137, **147**
Lenzites *126*
Russula 205, **234**
Trametes *45*
bifidus
Agaricus *215*
Russula 203, **215**
biformis
Clitocybe *408*
Coriolus 18, **26,** 27, 28
Marasmius 253, **274**
Polyporus *26*
bivalvis
Polyporus *83*
Blackfordae
Russula 204, **230**
Blakei
Agaricus *298*
Geopetalum 298, **298**
Pleurotus *298*
Blanchetianus
Polyporus 55, **63,** 63
blanda
Russula 202, **213**
blepharodes
Lentinus *292*
boletiformis
Agaricus *130*
bombycirhiza
Marasmius 285
bomfimensis
Fomes 53

borealis
Boletinus 161
Camarophyllus 385, **385**
Hygrophorus *385*
Polyporus *38*
Russula 203, **220**
Spongipellis 37, **38**
Boryanus
Agaricus *370*
Collybia *370*
Gymnopus 354, *370*
Boucheanus
Favolus *48*
brachypus
Coriolus 17, **21**
Polyporus *21*
braziliensis
Daedalea *49*
brevipes
Boletus *153*
Chanterel 171
Lactaria *187*
Marasmius 285
Prunulus 320, **328**
Russula *207*
breviporus
Polyporus *81*
brevis
Lactaria *187*
Broadwayi
Clitocybe 398, **416**
brumalis
Agaricus *406*, 406
Boletus *56*
Clitocybe *406*
brunneolus
Favolus *52*
Hexagona 48, **52**
Russula 205, **233**
brunnescens
Clitocybe 398, **415**
Collybia 374
Micromphale 307, **308**
brunneus
Polyporus 131
bryophilus
Chanterel 166
buccinalis
Agaricus *345*
Omphalina 344, **345**
bulbosus
Agaricus *142*
Suillus *142*
Burnhami
Camarophyllus 385, **389**
Hygrophorus *389*
Burserae
Daedalea *74*, *130*
Burtii
Polyporus *40*
butyracea
Collybia 374
byrsinus
Polyporus *75*
byssisedoides
Claudopus *302*
caelopus
Lentinus *292*
caeruleoporus
Polyporus *66*
Scutiger 64, **66**
caerulescens
Hygrophorus 395
caesiialbus
Prunulus 321, **337**
caesius
Boletus *34*
Mycena *327*
Polyporus *34*
Prunulus 320, **327**
Tyromyces 31, **34**
caespitosus
Agaricus *420*
Boletus *140*
Camarophyllus 385, **387**
Clitocybe 417
Hiatula 310, *316*
Hydrocybe *387*
Hygrophorus *387*
Lentinus 376, *420*
Marasmius *272*
Monadelphus 420, **420**
Pleurotus *421*
calceolus
Lactaria 200
calcitratus
Polyporus *110*
Pyropolyporus 102, **110**
californica
Hydrocybe 377, **382**
Omphalia 351
californiensis
Agaricus 342
Mycena 342
Omphalopsis 311, **315**
Calkinsii
Pyropolyporus 102, **105**
Tyromyces 30, **32**
calopus
Agaricus *282*
Marasmius 254, **282**
calospora
Crinipellis *238*
Pleurotopsis 238, **238**
calvescens
Lentinus *293*
Polyporus *81*
calyx
Agaricus *293*
campanella
Agaricus 310, *313*
Collybia 374
Omphalia *313*
Omphalopsis 310, 311, **313**
campanulatus
Marasmius *283*
Pleurotus *241*
Resupinatus 240, **241**
camphoratus
Agaricus *198*
Lactaria 175, **198**
camptophyllus
Agaricus 317
Omphalia 317
canadensis
Favolus *48*

candens
Clitocybe 396, **399**
candicans
Agaricus *399*, 399
candidissimus
Agaricus *298*
Geopetalum 298, **298**, 303
Pleurotus *298*
candidus
Chanterel *163*
Clitocybe 417
Marasmius 285
cantharelloides
Agaricus *168*
Elvela *168*
Merulius *169*
Panellus 244, **245**
Cantharellus
Agaricus 385, *388*
Camarophyllus 385, **388**
Hydrocybe *388*
Hygrophorus *388*
Merulius *169*
caperata
Coriolopsis 75, **77**
Favolus *50*
Hexagona 48, **51**
Polyporus *77*
cap llaripes
Mycena *328*
Prunulus 328, **328**, 342
capillaris
Marasmius 254, **283**
Mycena 342
capillipes
Marasmius *281*
capreolarius
Hygrophorus 395
caprinus
Agaricus 390
Camarophyllus 385, 390
Hygrophorus 390
carbonacea
Melanoporella **14**
Polyporus 14, *14*
carbonaria
Fuscoporia 3, **4**
Hexagonia *4*
carbonicola
Prunulus 322, **341**
caribaeus
Xerotus *165*
caricicola
Marasmius 253, **277**
carneofulvus
Polyporus *81*
carneolus
Agaricus *351*
Omphalia *351*
carneotomentosus
Agaricus *289*
Lentinus 289, **289**, 294
carneus
Fomes *95*
Polyporus *95*
carnosior
Clitocybe *410*
carnosus
Agaricus *358*
Gymnopus 352, **358**
carolinensis
Polyporus *26*
carpineus
Boletus *40*
caryophylleus
Agaricus *271*
Marasmius 252, **271**
cascus
Polystictus 77
castaneicolor
Marasmius 253, **274**
castanellus
Boletinellus 158, **158**
Boletinus *158*
castaneus
Boletus *134*
Gyroporus 133, **134**
Lentinus *293*
Suillus *134*
castanophilus
Polyporus *72*
castoreus
Lentinus 246
catephes
Agaricus *302*
Geopetalum 298, **302**
Pleurotus *302*
catervatus
Marasmius *257*
catinus
Agaricus *402*
Clitocybe 396, **402**
caudicinus
Boletus *60*
Polyporus 55, **60**, 63
caulicinalis
Agaricus *278*, 278, *287*
Marasmius *278*
caveatus
Agaricus *305*
Crepidopus 304, **305**
Pleurotus *305*
cavipes
Boletinus 159, **159**, 161
Boletus 159, *159*
cayennensis
Agaricus *361*
Cedrelae
Pyropolyporus 102, **105**
cellare
Tricholoma 420
centenarius
Agaricus *312*, 317
Omphalia *312*
Omphalopsis 310, **312**
centralis
Clitocybe *400*
Trametes *127*
ceraceus
Agaricus *378*
Hydrocybe 376, **378**
Hygrophorus *378*
cerasinus
Agaricus 384
Hygrophorus 384
cerifluus
Polyporus *33*
Tyromyces 31, **33**
cerinus
Agaricus *361*

cerussatus
Agaricus 417
Clitocybe 417
Marasmius *257*
cervicornis
Polyporus *53*
cervinialbus
Prunulus 320, **326**
cervinicolor
Marasmius 251, **265**
cervino-nitens
Polyporus *21*
cervino-plumbea
Hexagona *83*
cervinus
Boletus *26*
chaetoloma
Lentinus 294
chama
Agaricus 296
Lentinus 296
chamaeleontinus
Boletus *151*
Russula 204, **231**
Chantarellus
Agaricus 167, *169*
Chanterel 167, **169**
Chaperi
Amauroderma 115, **116**
Ganoderma **116**
chartaceus
Polyporus *26*
Chelidonium
Lactaria 174, **186**
chioneus
Agaricus 303
Pleurotus 303
Polyporus 30, *35*
Tyromyces 31, **35**
chlorocyanus
Agaricus 318
Omphalia 318
chlorophanus
Agaricus *378*
Hydrocybe 376, **378**
Hygrophorus *378*
chondripes
Agaricus *350*
Omphalia *350*
Omphalina 344, **350**
chromapes
Boletus *139*
Ceriomyces 136, **139**
chrysenteron
Boletus *150*
Versipellis *150*
Xerocomus *150*
chryseus
Agaricus *346*
chrysocephala
Clitocybe *387*, 417
chrysochaetes
Marasmius 250, **255**
chrysodon
Agaricus 390, *391*
Hygrophorus *391*
chrysoleucus
Agaricus 351
Omphalina 351
chrysopeplus
Gymnopus 353, **359**, 376
Lentinus *359*
chrysophyllus
Agaricus *346*
Omphalia *346*
Omphalina 344, **346**, 351, 352, 417, 418
chrysorhea
Lactaria 174, **188**
cibarius
Chanterel *169*
ciliatulus
Agaricus *309*
Hiatula 425
Leptomyces 309, **309**
ciliatus
Lentinus *292*
cilicioides
Agaricus *179*
Lactaria 174, **179**
cinchonensis
Fomitiporia 8, **10**
Gymnopus 354, **372**
Prunulus 322, **341**
cincinnatus
Polyporus *72*
cinerascens
Boletus *27*
cinereialbus
Marasmius 251, **264**
cinereiavellaneus
Prunulus 322, **340**
cinereus
Chanterel *168*
Lactaria 175, **190**
Merulius *168*
Sistotrema 124, *124*
Trogia **166**
cingulata
Hexagona *83*
cinnabarinus
Agaricus *170*
Boletus 71, *71*
Chanterel 167, **170**, 384
Hygrophorus *170*
Polyporus *71*
Pycnoporus 1, 71, **71**
Trametes *71*
cinnamomeus
Boletus *91*
Coltricia 91, **91**
Irpex *3*
Pocillaria *293*
Polystictus *92*
Strilia *91*
circellatus
Agaricus *181*
Lactaria 174, **181**
circinans
Boletus *153*
circinatus
Agaricus 308
Pleurotus 308
Polyporus *93*
circumstans
Polyporus *98*
cirratus
Agaricus 374
Collybia 374, 375

cirrifer
Coriolopsis 74, **76**
Polyporus *76*
Polystictus *76*
citricolor
Agaricus *316*
Mycena *316*
Omphalopsis 311, **316**
citrinellus
Agaricus 342
Mycena 342
Polyporus 131
citrinus
Boletus *72*
Russula 235
citromallus
Polyporus 131
cladotricha
Funalia 78, **78**
Polyporus *78*
clavaeformis
Marasmius 285
clavata
Omphalia *313*
Omphalopsis 310, **313**
clavicularis
Agaricus *330*
Mycena *330*
Prunulus 320, **330**
clavipes
Agaricus *410*
Clitocybe 397, **410**
clavularis
Agaricus *328*
clavus
Asterophora **166**
Collybia 374
Elvela *166*
Clementsianus
Marasmius *283*
Clintonianus
Boletus 154, **155**
clitocybiformis
Marasmius 251, **263**
clusilis
Collybia 374
coccineus
Agaricus *380*, 380
Boletus *71*, 157
Hydrocybe *381*
Hygrophorus *380*
Omphalina 344, **350**
Strobilomyces 157
cochleatus
Agaricus *295*
Lentinus *295*
coffeatum
Amauroderma 115, **116**
Polyporus *116*
cohaerens
Agaricus *360*, 360
colimensis
Marasmius 251, **261**
collina
Collybia 375
collinitus
Boletus *153*
collybiiformis
Omphalina 344, **349**
collybiiformis
Prunulus 321, **335**
coloradensis
Clitocybe 397, **410**
colorascens
Lactaria 174, **188**
coloratus
Hygrophorus *393*
coloreus
Agaricus *359*
colossus
Dendrophagus *30*
Polyporus 30, *30*
Tomophagus **30**
columbanus
Agaricus 417
Clitocybe 417
columbiensis
Polyporus 54, **58**
comatus
Polystictus 77
commiscibilis
Agaricus *306*
Crepidopus 304, **306**, 306
Pleurotus *306*
communis
Boletus *149*, *150*
Ceriomyces 137, **150**, 150
Schizophyllus *237*
compacta
Russula 202, **205**
compressipes
Agaricus *408*
Clitocybe 397, **408**
concavus
Agaricus *409*
Clitocybe 397, **409**, 420
Lentodiellum **297**
Panus *297*
concentricus
Coriolus 17, **23**
conchatus
Agaricus *289*
Boletus *108*
Panus *290*
Pyropolyporus 102, **108**
conchifer
Boletus 16, *16*
Poronidulus **16**
concinnus
Marasmius 254, **281**
concolor
Marasmius *239*
Scytinotus 239, **239**
conferruminatus
Agaricus 342
Mycena 342
confluens
Agaricus *269*, *295*
Boletus *92*
Collybia *269*, 375
Marasmius 252, **269**, 375
confragosus
Agaricus *126*
Boletus *126*
Daedalea 125, **126**
congelatus
Hygrophorus *381*

conglobatus
Polyporus *112*
conicus
Agaricus *379*
Boletus *140*
Ceriomyces 136, **140**
Hydrocybe 376, **379**
Hygrophorus *379*
coniferus
Boletus *157*
conigenoides
Agaricus *356*
Collybia *356*
Gymnopus 352, **356**
conigenus
Agaricus 375
Collybia 375
connatipes
Agaricus *326*
Mycena *326*
Prunulus 320, **326**
connatus
Agaricus 306
Coltricia 91, *92*
Crepidopus 304, **306**
Fomes *99*
Panus 295, *306*
Pleurotus 306
Polyporus *92*, *99*, 99
connexus
Agaricus *401*
Clitocybe 396, **401**
consobrina
Russula 203, **217**
constans
Agaricus *327*
Hydrocybe 377, **382**
Hygrophorus *382*
Mycena *327*
Prunulus 320, **327**
constrictus
Boletus *133*
Leccinum *133*
contrarius
Fomes *46*
Marasmius 253, **274**
Rigidoporus 45, **46**
controversa
Lactaria 200
convexa
Omphalopsis 311, **316**
Cookeii
Lenzites *126*
Copelandi
Marasmius 252, **273**
copulatum
Geopetalum 298, **302**
Panus *302*
coracicolor
Marasmius 251, **265**
coracipes
Marasmius 252, **268**
corallina
Russula 202, **213**
coriaceus
Boletus *92*
Cerrenella *74*
Irpex *74*
corinthiirubra
Russula 203, **220**
cornu-bovis
Fomes *112*
cornucopiae
Crepidopus 304, **305**, 306
Dendrosarcus *305*
Pleurotus *305*
cornucopioides
Agaricus *295*, *305*
Lentinellus **295**
Lentinus *295*
corrosus
Inonotus 86, **89**
corrugatus
Androsaceus *342*
Daedalea *126*
Earliella 1, 45, **45**
Polyporus *45*
Prunulus 322, **342**
corrugis
Fuscoporella 6, **7**
Lactaria 175, **197**
Polystictus 28, 77
corticalis
Agaricus 328
Prunulus 320, **328**, 343
corticatus
Pleurotus 308
corticola
Agaricus *328*
Mycena 285, *328*
Omphalia *312*
Omphalopsis 310, **312**
cossus
Agaricus 395
Hygrophorus 395
costaricensis
Fuscoporella 6, **7**
Cowellii
Polyporus 55, **60**
craspedius
Agaricus 308
Pleurotus 308
crassipes
Boletus *142*, *149*
crassus
Ceriomyces 136, **142**, 150, 151
Irpex *15*
Crataegi
Lenzites *126*
craterellus
Polyporus 54, **57**
cremea
Omphalina 344, **350**
cremeimelleus
Gymnopus 354, **368**
cremicolor
Camarophyllus 385, **389**
Hydrocybe *389*
Hygrophorus *389*
cremoraceus
Agaricus *359*
Gymnopus 353, **359**
cremoricolor
Russula 202, **208**
crenulatus
Agaricus 249, 310
Hiatula 310
Russula 205, **235**
Crescentiae
Marasmius 250, **259**

cretacea
Lepiota 310
cretatus
Polystictus *53*
crinitus
Agaricus 179, *291*
Boletus *84*
Lentinus 289, **291**, 294, 295
crispellus
Polyporus *34*
Tyromyces 31, **34**
crispus
Chanterel *164*
Polyporus *40*
Trogia *164*
crocata
Coriolopsis 74, **75**
Polyporus *75*
Polystictus *75*
crocea
Lactaria 174, **185**
Polyporus *72*
crocitinctus
Flaviporus 84, **84**
Polyporus *84*
crustosus
Pyropolyporus *104*
Russula 202, **209**
cryptopus
Polyporus *65*
Scutiger 64, **65**
crystallina
Mycena *322*
Prunulus 320, **322**
cubensis
Boletus 150
Cubamyces *43*
Earliella, 44, *45*
Fomitiporia 8, **8**
Irpex *15*
Irpiciporus 15, **15**
Lentinula 295
Lentinus 295, *295*
Lenzites 127, **128**, 128
Marasmius 251, **263**
Panus *293*
Polyporus *43*
Ptychogaster 131
Resupinatus 240, **240**
Trametes 42, **43**
cucullatus
Favolus *52*
Hexagona 48, **52**
Marasmius 254, **280**
Polyporus *90*
cuneatus
Coriolellus 28, **28**
cupulaeformis
Polyporus *47*
curcurbitula
Marasmius 285
Curreyi
Marasmius 285
curtipes
Favolus *52*
Marasmius 252, **268**
Curtisii
Boletus *143*
Ceriomyces 136, **143**
Curtisii
Favolus *59*
Ganoderma 118, **120**
Lentinus 294
Polyporus *120*
curvipes
Omphalia *329*
Prunulus 320, **329**, 343
cuspidata
Hydrocybe 376, **379**
Hygrophorus *379*
cuspidatella
Omphalina 344, **349**
cutefracta
Russula 236
cuticolor
Clitocybe 398, **413**
Omphalopsis 311, **317**
cuticularis
Inonotus 86
cyaneobasis
Mycena *323*
Prunulus 320, **323**, 343
cyanescens
Boletus *133*
Gyroporus 133, **133**
Suillus *133*
cyanipes
Agaricus 317
cyanocephala
Collybia *354*
Gymnopus 354, **372**
cyanothrix
Mycena *323*
cyanoxanthus
Agaricus *217*
Russula 203, **217**
cyathiformis
Agaricus *406*, 406, *409*, 409
Marasmius 252, **268**
Polyporus *57*
cyclodes
Polystictus *25*
cymbaliferus
Agaricus *331*
Mycena *331*
Prunulus 321, **331**
cyphellaeformis
Agaricus 303
Pleurotus 303
cyphelloides
Coriolus 18, **26**
Polystictus *26*
daedalea
Hexagona 47, **49**
Merulius *49*
Dartmouthi
Boletus *151*
Davisii
Hydrocybe 376, **382**
Hygrophorus *382*
Dawsonii
Omphalina 344, **345**
dealbatus
Agaricus *398*
Clitocybe 306, 396, **398**, 418, 419
Marasmius *257*
Microporellus 53, **53**
Panellus 244, **245**

dealbatus
Panus *245*
Polyporus 52, *53*
debilis
Agaricus 342
Mycena 342
deceptiva
Lactaria 173, **177**
decipiens
Boletinus *159*
Boletus *124*, *159*, 159
Coriolus 27
Polyporus *27*
decolorans
Agaricus *225*
Heliomyces 247, **249**
Russula 204, **225**
Russulina *225*
decorus
Boletus *142*
Cortinellus 420
decurrens
Marasmius *276*
Polyporus *65*
Scutiger 64, **65**
deflexa
Lactaria *181*
delectabilis
Agaricus *323*
Mycena *323*
Prunulus 320, **323**
delectans
Coriolus 17, **20**
Marasmius 254, **281**
Polyporus *38*
Spongipellis 37, **38**
delica
Russula 202, **207**
delicata
Lactaria 174, **185**
Polyporus 54, **56**
delicatellus
Agaricus *354*
Collybia *354*
Gymnopus 352, **354**
deliciosus
Agaricus *186*
Lactaria 174, **186**
Russula *207*
Demetrionis
Fomitiporella 12, **12**
dendriticus
Polyporus 131
densifolium
Geopetalum 298, **301**
Gymnopus 354, **371**
Russula 202, **206**
dentatus
Gymnopus 353, **366**
denticulatus
Agaricus 294, *332*
Gymnopus 354, **368**
Mycena *332*, *334*
Prunulus 321, **332**, 334
depallens
Russula 236
depauperatus
Coriolus 17, **20**
Polystictus *20*
dependens
Coltriciella **91**
Polyporus 91, *91*
Polystictus *91*
Pyropolyporus 102, **106**
deplanata
Daedalea 127
Lenzites *127*
detersibilis
Agaricus *363*
Collybia *363*
Gymnopus 353, **363**
detonsa
Lentinula 294, **295**
Lentinus *295*
Polyporus *46*
diabolicus
Polyporus 55, **62**
dibaphus
Polyporus 54, **56**
Trametes *77*
dichotomus
Chanterel *170*
dichrous
Boletus *147*
Marasmius 252, 253, **272**, 286
dicolor
Agaricus *406*
Clitocybe 397, **406**
dictyocephalus
Boletus 150
difformis
Agaricus 417
Clitocybe 417
dimidiata
Elvela *165*
discipes
Collybia *364*
Gymnopus 353, **364**
discoideus
Polyporus 54, **57**
discolor
Daedalea *126*
discretus
Agaricus *309*, 342, 425
Hiatula 425
Leptomyces 309, **309**
Mycena 342
distans
Lactaria *196*
distantifolia
Lenzites *125*
Omphalopsis 311, **315**
Scytinotus 239, **239**
distortus
Abortiporus **64**
Boletus 64, *64*
ditopus
Agaricus 417
Clitocybe 417
domesticus
Gymnopus 354, **371**
dorcas
Polyporus 81
Dorotheae
Agaricus 375
Collybia 375
drimeja
Russula 221, 236

Drummondii
Coriolus 17, **23**
Polyporus *23*
dryadeus
Inonotus 86, **86**
Polyporus *86*
dryophilus
Agaricus *362*
Collybia *362*
Fomitiporia 8, **8**
Gymnopus 353, 354, **362,** 374, 375
Inonotus 86, **87**
Polyporus *87*
dualis
Polyporus *93*
duracinus
Leptoporus *37*
Tyromyces 31, **37**
Dussii
Myriadoporus *114*
Earleae
Fomitiporia 8, **9**
Gymnopus 353, **364**
Earlei
Clitocybe 397, **410**
Hydrocybe 377, 384
Hygrophorus *384*
Lenzites 127, **128**
Marasmius 250, **258**
Omphalina 344, **350**
Polyporus *67*
Pyropolyporus 102, **107**
Russula 203, **217**
Eastwoodiae
Suillellus 151, **152**
Eatonae
Gymnopus 352, **356**
eburneus
Agaricus *391*
Hygrophorus *391*
eccentricus
Boletus 150
Clitocybe 396, **399**
Russula 202, **207**
echinocephala
Eomycenella *280*
echinopus
Lentinus *292*
echinulata
Crinipellis 287, **288**
ectypoides
Agaricus 417
Clitocybe 417
ectypus
Agaricus 417
Clitocybe 417
Coriolus 17, **18**
Polyporus *18*
edulis
Boletus *142*
Leccinum *142*
Egelingianus
Schizophyllus *237*
elatinus
Agaricus 303
elatus
Polyporus 111
elbensis
Boletus 156
elegans
Agaricus 343
Boletus *62*
Daedalea *127*
Mycena 343
Polyporus 55, **62**
Russula 236
Trametes *127*
elegantulus
Hygyrophorus *394*
Mycena *337*
Prunulus 321, *337*
elephantinus
Agaricus 206
Clitocybe 397, **405**
elixus
Agaricus 417
Clitocybe 417
Ellisianus
Fomes 95, **98**
Tyromyces 31, **34**
Ellisii
Polyporus *64*
Scutiger 64, **64**
elongatipes
Marasmius 253, 254, **274**
Micromphale 307, **307**
Pleurotus *307*
emeticus
Agaricus 201, *234,* 235
Russula 205, **234**
endocrocinus
Polyporus *86*
endophaea
Lenzites *130*
endothrix
Polyporus *79*
endozonus
Polyporus *81*
epichysium
Agaricus *347*
Omphalia *347*
Omphalina 344, **347,** 351, 418
epigaea
Daedalea *90*
epiphyllus
Agaricus *277*
Irpex 28
Marasmius *277*
epipterygius
Agaricus *335*
Mycena *335*
Prunulus 321, **335,** 342
erubescens
Agaricus 417
Clitocybe 417
Hygrophorus 395
esculentoides
Agaricus *359*
esculentus
Boletus *142*
Collybia 375
estensis
Collybia 375
estriatus
Lentinus *293*
Eugeniae
Crepidopus 304, **305**
Geopetalum *305*

eugrammus
Agaricus *245*
Lentinus *245*
Panellus 244, **245**
Panus *245*
europaeus
Favolus *48*
euspeireus
Agaricus *316*
Omphalopsis 310, 311, **316,** 317, 375
Everhartii
Mucronoporus *103*
Pyropolyporus 102, **103,** 111
evolutus
Polyporus *45*
Rigidoporus 45, **45**
exasperatus
Boletus *59*
excavatus
Agaricus *308*, 308
Pleurotus *308*
eximius
Boletus *141*
Ceriomyces 136, **141**
Omphalia *345*
Omphalina 344, **345**
expallens
Collybia *363*
Gymnopus 353, **363**
Russula 203, **221,** 221, 236
exsculptus
Agaricus *359*
Collybia *359*
Gymnopus 353, 354, **359**
extensus
Polyporus *110*
Polystictus *75*
Pyropolyporus 103, **110**
facifer
Agaricus *421*
fagicola
Polyporus 54, **55**
fagineus
Marasmius *272*
Merulius *164*
Plicatura 163, **164**
fallax
Lentinus *292*
Russula 205, **235**
familia
Agaricus *365*
Collybia *365*
Gymnopus 353, **365**
farinacea
Cerrenella 73, **74**
Clitocybe 396, **401**
Gymnopus 352, **357**
Irpex *74*
Prunulus 320, **326**
fasciatus
Boletus *114*
Elfvingia 113, **114**
Marasmius 252, 254, **270**
Schizophyllus *237*
favoloides
Hexagona *83*
Feathermanni
Polyporus *84*
Feei
Polyporus *21*
felix
Marasmius 254, **279**
felleus
Boletus *134*
Clitocybe 396, **404**
Dictyopus *134*
Rhodoporus *134*
Tylopilus 134, **134,** 151
ferruginatus
Boletus *143*
Ceriomyces 136, **143**
ferrugineus
Boletus *134*
ferruginosus
Boletus 3, *5*
Fuscoporia 4, **5**
fibrillosus
Inonotus *70*
Polyporus 70, *70*
Pycnoporellus **70**
fibrosipes
Marasmius 251, **266**
fibrosus
Boletus *84*
fibula
Agaricus *314*
Omphalopsis 310, 311, **314**
fibuloides
Agaricus *313*
Omphalia *313*
Omphalopsis 310, **313**
filopes
Agaricus 343
Marasmius 254, **280**
Mycena 343
fimbriatus
Agaricus 307
fimbriporus
Polyporus 40
fimetarius
Gymnopus 354, **372**
fimicola
Collybia *368*
fingibilis
Russula 204, **224**
firmus
Boletus *151*
fissilis
Polyporus *39*
Spongipellis 37, **39,** 40
fissus
Polyporus 55, **62**
fistulosus
Boletus *143*
flabellatus
Agaricus 303
Panellus 244, **245**
Pleurotus 303
flabelliformis
Agaricus *289*, 289
Chanterel *164*
Panus *290*
Plicatura 163, **164**
flabellum
Polyporus *27*
flaccidus
Agaricus 417
Clitocybe 417
Lentinus 294
Lenzites *127*

flammeus
Agaricus *381*
Hydrocybe 376, 377, **381**
flavellus
Agaricus *256*, *349*
Marasmius 250, **256**
Omphalia *349*
Omphalina 344, **349**
flavescens
Chanterel *169*
Gymnopus 352, **357**
flaviceps
Russula 204, **225**
flavicitrinus
Prunulus 321, **336**
flavidellus
Agaricus *404*
Clitocybe 397, **404**
flavidus
Boletus *154*
Polyporus *69*, 69
Russula 202, **211**
flavifolia
Mycena *324*
Prunulus 320, **324**
flavipes
Boletus *148*, 148
flaviporum
Amauroderma 115, **116**
Boletus *140*
Ceriomyces 136, **140**
flavodiscus
Hygrophorus 391, **392**
flavolanatus
Agaricus *302*
Geopetalum 298, **302**
Pleurotus *302*
flavolutea
Hydrocybe 377, **383**
Hygrophorus *383*
flavomarginata
Fomitiporia 8, **11**
flavosquamosus
Polyporus *64*
flavovirens
Polyporus *68*
flavus
Boletus *86*
Russula 204, **226**
flexuosipes
Boletus *138*
flexuosus
Agaricus 180
Lactaria 200
floccosus
Chanterel 167, **168**, 171
flocculosa
Russula 202, **213**
floriceps
Marasmius *267*
floridanus
Coriolus *19*
Fomitiporella 12, **14**
Hexagona 47, **49**
Polyporus *19*
fluxilis
Agaricus 303
Pleurotus 303
focicola
Coltricia 91, **92**, 94
Polyporus *92*
foetens
Agaricus *214*
Heliomyces 247, **249**
Panus 303
Russula 203, **214**
foetentula
Russula *214*
foetida
Lactaria *197*
Marasmius 252, **273**, 286
Merulius *273*
foliolum
Agaricus *165*
fomentarius
Boletus *113*
Elfvingia 113, **113**
Fomes *113*
Polyporus *113*
fractipes
Grifola 68, **69**
Polyporus *69*
fragilis
Agaricus *233*, 233, *313*, 313
Hexagona 48, **50**
Russula *233*
fragillissima
Hiatula 310
fragrans
Agaricus 417
Bjerkandera *41*
Clitocybe 417
Hygrophorus 391, **394**
Polyporus *41*
fraternus
Boletus *150*
fraxineus
Boletus *96*
Fomes 95, **96**
Polyporus *96*
fraxinophilus
Fomes 95, **98**
Polyporus *98*
friabilis
Lentinus 303
Friesiana
Hexagona *24*
Friesii
Favolus *49*
Polyporus *19*
frondosus
Boletus 68, *69*
Grifola 68, **69**
Polypilus *69*
Polyporus *69*
Frostii
Boletus *152*
Suillellus 151, **152**
frustulosus
Boletus *138*
Ceriomyces 136, **138**
fruticum
Inonotus 86, **89**
Polyporus *89*
fuliginella
Collybia *366*
Gymnopus 353, **366**, 375

fuligineus
Hygrophorus *394*
Lentinus 294
fuliginosus
Agaricus *194*
Boletus *82*
Ischnoderma **82**
Lactaria *194*
Prunulus 321, **335**
fulvescens
Russula 204, **229**
fulviceps
Marasmius *283*
fulvida
Fuscoporia 4, **5**
Mucronoporus *5*
Panus *291*
fulvidiscus
Gymnopus 354, **368**
fulvifibrillosum
Micromphale 307, **307**
fulvipes
Gymnopus 354, **369**
fulvitinctus
Hapalopilus *36*
Polyporus *36*
Tyromyces 31, **36**
fulvocinerea
Coriolopsis 74, **76**
fulvomelleus
Inonotus 86, **87**
fulvosus
Agaricus *387*
Camarophyllus 385, **387,** 395, 417
fulvo-umbrinus
Coriolus 17, **24**
fulvus
Boletus *98*, *103*, 150
Fomes *103*
Pyropolyporus 102, **103**
fumigatus
Lentinus *291*
fumosiavellaneus
Prunulus 322, **340**
fumosipes
Boletus *149*
Ceriomyces 137, **149**
fumoso-avellanea
Fomitella 101, **101**
Trametes *101*
fumosus
Agaricus *409*
Bjerkandera 40, **41**
Boletus *41*
Clitocybe 397, **409**
Lactaria *194*
Polyporus *41*
furcatus
Agaricus *215*
Amanita *215*
Russula *215*
furfurosus
Lentinus 294
fuscescens
Hydnoporia **3**
Sistotrema 3, *3*
fuscifrons
Agaricus *308*
Micromphale, 307 **308**
fuscifrons
Pleurotus *308*
fuscipes
Clitocybe 396, **400**
Collybia 375
Prunulus 321, **337**
fuscoalbus
Hygrophorus 395
fusco-badius
Polyporus *45*
fuscolilacinus
Agaricus *364*
Collybia *364*
Gymnopus 353, **364**
fuscoporus
Boletus *40*
fuscopurpureus
Agaricus *272*
Marasmius 252, **272**
galactinus
Polyporus *39*
Spongipellis 37, **39,** 40
galericulatus
Agaricus *336*
Mycena *336*
Prunulus 321, **336,** 343
gallinaceus
Agaricus 418
Clitocybe 418
galopus
Agaricus 319
Mycena 319
gausapata
Trametes *111*
geogenium
Geopetalum *300*
Pleurotus *300*
geophilum
Geopetalum 298, **299**
geotropus
Agaricus 418
Clitocybe 418
Fomes 95, **100**
Polyporus *100*
Gerardianus
Agaricus *347*, 418
Clitocybe *347*, 418
Gerardii
Lactaria 175, **195**
gibberulosus
Polyporus *24*
giganteus
Agaricus 418
Clitocybe 418
Gillotii
Polyporus *97*
gilvus
Agaricus *407*
Boletus *81*
Hapalopilus 1, 80, **81**
Polyporus *81*
Boletus *147*
Marasmius 254, **282**
glaberrima
Daedalea *126*
Lenzites *126*
glabratus
Lentinus 294

glandulosus
Agaricus 306
Boletinus 156
Pleurotus 306
Glatfelteri
Gymnopus 352, **358**
glauca
Russula 203, **222**
glaucescens
Lactaria 173, **176**
glaucopus
Androsaceus *268*
Marasmius 252, **268**
glebigenus
Marasmius 250, **258**
glomeratus
Polyporus *90*
glutinosus
Hygrophorus 391, **392**
glyciosmus
Agaricus *193*
Lactaria 175, **193**
gracilis
Boletus *135*
Polyporus *60*
Russula 203, **222**
Tylopilus 134, **135**
gracillimus
Agaricus 351
Omphalina 351
gracillipes
Prunulus 322, **340**
graminicola
Lentinus 289, **290**
Russula 204, **223**
graminis
Marasmius 250, **259**
graminum
Agaricus *283*
Marasmius 254, **283**, 285
Grantii
Prunulus 321, **338**
granulatus
Boletus *153*
Ixocomus *153*
Rostkovites 153, **153**
Russula 203, **214**
Viscipellis *153*
graveolens
Boletus 112, *112*
Fomes *112*
Globifomes **112**
Greenei
Cyclomyces 131, *131*
Cycloporus **131**
gregarius
Marasmius *279*
grenadensis
Pyropolyporus 102, **107**
grisea
Lactaria 175, **192**
griseifolia
Clitocybe 398, **415**
Gymnopus 354, **370**
grisellus
Boletinus 159, **159**
griseofuscus
Irpex *74*
griseoroseus
Ceriomyces 136, **139**
griseus
Agaricus *222*, 222, 318
Boletus *138*
Ceriomyces 136, **138**
Omphalia 318
Pleurotus *240*
Polyporus *67*
Resupinatus 240, **240**
Russula *222*
Russulina *222*
Scutiger 64, **67**
guadalupensis
Boletus *146*
Favolus *49*
guadelupensis
Ceriomyces 137, **146**, 150
Ganoderma 118
Plicatura 163, **164**
Polyporus *101*
Xerotus *164*
guaraniticus
Panus *292*
guttulatus
Polyporus *31*
Tyromyces 30, **31**
guyanensis
Marasmius 250, **256**
gynaecogalus
Agaricus *199*
haedinus
Agaricus *301*
Coriolus 17, **22**
Geopetalum 298, **301**
Pleurotus *301*
Polyporus *22*
haematocephalus
Agaricus *267*
Hygrophorus 384
Marasmius 252, **267**, 285
haematodes
Marasmius *239*
Scytinotus 239, **239**
haematopus
Agaricus 318, *319*
Galactopus 318, **319**
Lentinus *246*
Mycena *319*
Panellus 244, **246**
Haematoxyli
Pyropolyporus 103, **111**
Halesiae
Polyporus *40*
Hariolorum
Collybia 375
Hariotianus
Polystictus *79*
Harperi
Clitocybe 398, **415**
Harrisii
Marasmius 251, **264**
havannensis
Polyporus *44*
Trametes 42, **44**
helvus
Agaricus *191*
Lactaria 175, **191**
hemichrysus
Boletus *141*
Ceriomyces 136, **141**

hemileucus
Agaricus *266*
Marasmius 251, **266**
Polyporus *101*
hemiphlebius
Agaricus *305*
Crepidopus 304, **305**
Pleurotus *305*
hemisphaerica
Mycena *329*
Prunulus 320, **329**
hemispilus
Agaricus *293*
hepatica
Omphalia 318
heterophyllus
Agaricus *216*
Russula 203, **216**
hexagoniformis
Coriolus 17, **20**
Hibbardae
Lactaria 175, **193**
hiemalis
Clitocybe 397, **406**
Mycena 343
Hilairianus
Agaricus *361*
hinnuleiformis
Marasmius 251, **263**
hinnuleus
Marasmius 251, **259**
Hiorami
Marasmius 250, **256**
hirneolus
Agaricus 418
Clitocybe 418
hirsutulus
Coriolus 16, **18**, 28
Polyporus *18*
hirsutus
Agaricus *130*
Boletus *24*, 24, **86**
Gloeophyllum 129, **130**
Inonotus 86, **86**
Polyporus *24*
Sesia *130*
hirtellus
Boletus *154*
Polystictus *24*
Rostkovites 153, **154**
hirticeps
Collybia 375
hirtiformis
Lentinus 289, **293**
hirtipes
Marasmius *274*
hirtus
Agaricus *293*
Favolus 83
Lentinus 289, **293**, 294, 295
Panus *293*
hispidellus
Polyporus *66*
hispidoides
Polyporus *90*
hispidulus
Favolus *49*
Funalia 78, **78**
Hapalopilus *78*
hispidulus
Trametes *78*
hispidus
Boletus *86*
Inodermus *86*
Inonotus *86*
Polyporus *86*
Hobsoni
Agaricus 303
Pleurotus 303
Hoffmani
Agaricus 418
Clitocybe 418
holmiensis
Polyporus *41*
holocyaneus
Polyporus *66*
Scutiger 64, **66**
holotephrus
Microporellus 53, **53**
Polyporus *53*
hondensis
Clitocybe 398, **413**
hondurensis
Coriolus 17, **22**
Heliomyces 247, **248**
Hexagona 48, **51**
Hydrocybe 377, **383**
Hygrophorus **383**
Marasmius 250, **258**
hornodermus
Fomes *97*
Housei
Ceriomyces 137, **145**
humidicola
Russula 204, **230**
humilis
Polyporus 54, **58**
Humphreyi
Polyporus *60*
hydnatinus
Boletus *84*
hydniceps
Polyporus 54, **55**
hydnoides
Boletus 84, *84*
Pogonomyces **84**
hydrophilus
Polyporus *39*
Spongipellis 37, **39**
hydrogramma
Omphalina 344
hydrolips
Elvela *168*
hygrophoroides
Agaricus *362*
Collybia *362*
Gymnopus 353, **362**
Lactaria 175, **196**, 200
hygrophorus
Phyllotus *245*
hyperboreus
Polyporus *103*
hyperellus
Marasmius *262*
hypobrunnea
Omphalina 344, **348**
hypococcineus
Polyporus *72*

hypophaeus
Marasmius *267*
hypothejus
Agaricus *394*
Hygrophorus 390, 391, **394**, 396
hysginus
Agaricus *181*
Lactaria 174, **181**
ichoratus
Agaricus *196*
Lactaria 175, **196**
igniarioides
Xanthochrous 111
igniarius
Boletus *98*, 101, *103*
Fomes *103*
Phellinus *103*
Polyporus *103*
Pyropolyporus 102, **103**
ignobilis
Collybia *364*
Gymnopus 353, **364**
ignoratus
Boletus 150
ilicincola
Polyporus *27*
illachrymans
Lactaria 200
illudens
Agaricus 420, *421*
Boletus *145*
Ceriomyces 137, **145**
Clitocybe *421*
Monadelphus 417, 420, **421**
imberbis
Boletus *41*
imbricatus
Phyllotus *245*
immaculatus
Agaricus *312*
Mycena *312*
Omphalopsis 310, **312**
immitis
Polyporus *39*
immutabilis
Hydrocybe 376, **382**
Hygrophorus *382*
impolitus
Polyporus 37
impudicus
Marasmius 285
inaequalis
Marasmius 250, **256**
incanus
Placodes *96*
Trametes *126*
incarnatus
Boletus *27*
Omphalina 344, **351**
Russula *208*
inconspicuum
Geopetalum 298, **301**
Marasmiellus 243, **243**
Pleurotus *301*
Polyporus *46*
inconstans
Agaricus *289*
incrustata
Clitocybe 398, **416**
incrustata
Fomes *123*
indecisus
Boletus *135*
Tylopilus 134, **135**
indigo
Agaricus *187*
Lactaria 174, **187**
induratus
Favolus *52*
Hexagona 48, **52**
inermis
Fomitiporella 12, **13**
Poria *13*
inflexibilis
Polyporus *104*
Pyropolyporus 102, **104**
inflexus
Boletus *143*
Ceriomyces 136, **143**
inflatus
Polyporus *94*
infundibuliformis
Agaricus *408*
Chanterel 167, **168**
Clitocybe 397, **408**
Merulius *168*
infundibulum
Panus *293*
innixus
Boletus *140*
insignis
Russula 202, **212**
insititius
Marasmius 253, 254, **278**
insulsus
Agaricus *180*
Lactaria 174, **180**
integer
Agaricus *228*
Hypophyllum *209*
Russula 204, **228**
Russulina *228*
integrellus
Agaricus 351
Omphalia 317
Omphalina 351
intermedium
Ganoderma 118
intertextus
Agaricus *328*
Mycena *328*
Prunulus 320, **328**
inversus
Agaricus *407*
Clitocybe 397, **407**, 419
involuta
Lactaria 174, **177**
iocephalus
Agaricus *271*
Marasmius 252, **271**
iodinus
Cyclomyces *85*
Cycloporellus **85**
Polyporus *85*
ionides
Marasmius 252, **268**
Iris
Agaricus 343
Mycena 343

irregularis
Polyporus *97*
irrorata
Collybia *373*
isabellinus
Boletus *40, 156*
Lactaria 175, **199**
jalapensis
Marasmius 251, **264**
Panellus 244, **244**
Omphalina 344, **349**
jamaicensis
Daedalea *130*
Fomitiporia 8, **11**
Gymnopus 354, **373**
Inonotus 86, **88**
Marasmius 251, **261**
Polystictus *24*
Pyropolyporus 102, **107**
Johnsoniana
Fomitiporella 12, **13**
Johnstonii
Marasmius 252, **269**
jozzolus
Agaricus *391*
Hygrophorus 390, 391, **391**
juglandinus
Boletus 12
juglandis
Marasmius 285
juniperinus
Agaricus *125*
Daedalea 125, **125**
Fuscoporia 4, **4**
Inonotus 86, **88**
Marasmiellus 243, **243**
Polyporus *106*
Pyropolyporus 102, **106**
kansensis
Polyporus *66*
Trametes *125*
Kermesinus
Agaricus *350*, 350
Omphalia *350*
Klotzschii
Lenzites *126*
labyrinthicus
Polyporus *26*, 26, 37
labyrinthiformis
Agaricus *125*
lacerata
Collybia *367*
Polyporus *27*
lachnophyllus
Agaricus *360*
Collybia *360*
Gymnopus 353, **360**
lactariiformis
Clitocybe 397, **409**
lacteus
Agaricus *209*, 343, 391
Boletus *133*
Irpiciporus 15, **15**
Mycena 343
Polyporus *36*
Russula 202, **209**
Sistotrema *15*
Trametes *126*
Tyromyces 31, **36**
lactifluus
Agaricus *195*
Boletus *153*
Lactaria 175, **195**, 200
Leccinum *153*
Polyporus *69*
lactifluus-dulcis
Agaricus *198*
lactus
Hygrophorus 395
lacunosus
Agaricus *359*
Collybia *359*
laeticolor
Scutiger 64, **65**
laetus
Agaricus *380*
Hydrocybe 376, 377, **380**, 384
Hygrophorus *380*
laminata
Fomitiporia 8, **11**
lanatus
Polyporus *75*
Langloisiana
Fomitiporella 12, **13**
Langloisii
Fomitiporia 7, 8, **9**
Pyropolyporus 102, **109**
languidus
Agaricus *276*
Marasmius 253, **276**
lanuginosa
Lactaria 174, **182**
lapidescens
Agaricus 317
Mylitta 317
laricinus
Boletus 156
Hydrocybe 376, **380**
Hygrophorus *380*
Laricis
Boletus *99*
Fomes 95, **99**
lateralis
Boletus *158*
latericius
Prunulus 322, **342**
lateritium
Hypophyllum *187*
Plicatura 163, **164**
Xerotus *164*
latifolius
Agaricus *327*
Mycena *327*
Prunulus 320, **327**
latissimus
Polyporus *125*
Laurae
Hygrophorus 391, **392**
laxipes
Collybia 375
Leaianus
Agaricus *333*
Collybia *333*
Prunulus 321, **333**
Lecomtei
Lentinus *292*
leiodermus
Coriolus 17, **23**

leiodermus
Polyporus *23*
leiopus
Agaricus 374, 375
lenis
Polyporus *75*
lenta
Omphalina 344, **349**
lentinoides
Agaricus *360*
Crepidotus *293*
Gymnopus 353, **360**
lepida
Russula 202, **208**
lepideus
Agaricus *296*
Lentinus *296*
lepiotiformis
Prunulus 319, **322**
Leprieurii
Lentinus *291*
leprosus
Boletus *142*
Hexagona *83*
Favolus 83, **83**
leptocephalus
Agaricus 343
Boletus 151
Mycena 343
leptolomus
Agaricus *400*
Clitocybe 396, **400**
leptophyllus
Agaricus *325*
Mycena *325*
Prunulus 320, **325**
leptopus
Marasmius 254, **279**
leucocephalus
Marasmius 285
leucophaeus
Chanterel *168*
Polyporus *114*
Prunulus 321, **336**
leucomallus
Polyporus *36*
Tyromyces 31, **36**
leucospongia
Polyporus 29, *29*
Spongiporus **29**
Leveillei
Lentinus *291*
levis
Daedalea *127*
Lentinus 289, **293**, 294
Panus *293*
licnoides
Hapalopilus 1, 80, **81**
Polyporus *81*
Polystictus *81*
Liebmanni
Polyporus *46*
Rigidoporus 45, **46**
lignatilis
Boletus 151
Chanterel 171
ligneus
Fomes 95, **97**
Polyporus *97*
ligneus
Trametes 42, **44**
ligniaria
Collybia *333*
Prunulus 321, **333**
lignifragus
Leptomyces 309
ligniota
Lactaria 175, **194**
Lactariella *194*
lilacea
Russula 236
lilacifolius
Agaricus *346*
Omphalia *346*
Omphalina 344, **346**
lilacinus
Agaricus 343, *346*, 346
Mycena 343
liliputianus
Agaricus *239*
Pleurotopsis 238, **239**
limacinus
Agaricus 395
Hygrophorus 395
limatulus
Boletus *142*
limitatus
Coriolus 17, **20**
Trametes *20*
limonium
Agaricus *358*
limpidoides
Pleurotus 303
limpidus
Agaricus 303
Pleurotus 303
Lindheimeri
Polyporus *40*, *79*
lineatus
Agaricus 343
Mycena 343
Linnaei
Russula 236
linteus
Polyporus *109*
Pyropolyporus 102, **109**
Lionnetii
Elfvingia 113, **115**
Ganoderma *115*
Listeri
Agaricus *176*
livescens
Lactaria *184*
livido-albus
Hygrophorus 395
lividorubescens
Agaricus *184*
Lactaria 174, **184**
Lloydii
Coriolus 17, **23**
Fomitiporia 8, **10**
lobata
Elfvingia 1, 113, **114**
Polyporus *114*
lobulatus
Agaricus *245*
longipes
Agaricus 352, *366*

longipes
Gymnopus 353, **366**
Marasmius *274*, 274
Prunulus 321, **338**
longistriatus
Marasmius *274*
loripes
Collybia 375
lucidus
Fomes 118
ludens
Polyporus *19*
ludoviciana
Fuscoporella 6, **6**
Gymnopus 352, **355**
Prunulus 320, **330**
luridescens
Spongipellis 37, **39**
luridus
Boletus 151, *151*
Hydrocybe 376, **381**
Hygrophorus *381*
Polyporus *56*
Suillellus 151, **151**
luteicolor
Omphalina 344, **348**
luteobasis
Russula 204, **227**
luteola
Lactaria 175, **197**
Omphalia *345*
luteo-olivaceus
Agaricus *359*
luteopallens
Agaricus *325*
Mycena *325*
Prunulus 320, **325**
lutescens
Chanterel *168*
luteus
Agaricus *224*
Boletus 154, **155**, 156
Cricunopus *155*
Ixocomus *155*
Russula 204, **224**
Russulina *224*
Viscipellis *155*
luxurians
Collybia *362*
Collybidium *362*
Gymnopus 353, **362**
lycoperdoides
Agaricus 425, *425*
Asterophora 166, *166*
lycoperdonoides
Agaricus *166*
macrorrhizus
Marasmius 285
maculatus
Agaricus *358*, 358
Collybia *358*
Lactaria 174, **185**
Polyporus *31*
maculosus
Agaricus *407*, 407
Polyporus 55, **61**
magnifica
Russula 202, **205**
magnisporus
Boletus *151*
magnisporus
Marasmius 253, **275**
magnus
Lentinus *296*
Prunulus 321, **338**
Magnusii
Phyllodontia *124*
malicola
Trametes *39*
Mangiferae
Bresadolia 131
marasmiiformis
Gymnopus 354, **371**
marasmioides
Melanopus *61*
Polyporus 55, **61**
Marbleae
Marasmius 250, **255**
margarita
Prunulus 322, **340**
marginatus
Boletus *98*
Clitocybe *421*
Fomes *98*
Hydrocybe 376, **378**
Hygrophorus *378*
Monadelphus 420, **421**
Polyporus 95, *98*
marginella
Fuscoporia 4, **5**
Polyporus *5*
Mariae
Russula 202, **210**, 236
mariannus
Polyporus *45*
marmoratus
Polyporus *114*
martinicensis
Xerotinus 165, **165**
Xerotus *165*
mastrucatus
Agaricus 243
maurus
Agaricus *363*
Gymnopus 353, 354, **363**
Omphalia *363*
Mauryi
Xerotinus 165, **165**
Xerotus *165*
maximus
Agaricus 418
Ceriomyces 137, **146**
Clitocybe 418
Coriolus 18, **26**
Fomitiporia 8, **11**
Hexagona 47, **49**
Irpex *26*
Lentinus *296*
Russula 204, **229**
McMurphyi
Omphalopsis 311, **315**
media
Clitocybe 397, **410**
megalospora
Clitocybe *366*, 418
megaloma
Elfvingia 113, **114**
Fomes *114*
Polyporus *114*

melaleuca
Melanoleuca 374
melanoporoides
Fomes *112*
melanoporus
Nigrofomes **112**
Polyporus 112, *112*
melanopus
Helotium *277*
Marasmius 254, **284**
Meliae
Fomes 95, **100**
Polyporus *100*
meliigena
Agaricus *324*
Mycena *324*
Prunulus 320, **324**
melleidiscus
Prunulus 320, **325**
melleopora
Fomitiporella 12, **13**
melleus
Agaricus *362*
melliolens
Russula 204, **228**
membranaceus
Boletus *23*
Coriolus 17, **23**, 27
Polyporus *23*
Memmingeri
Coltricia 91, **94**
Menandianus
Polyporus *27*
mephiticus
Hygrophorus *387*
merulioides
Boletinellus 158, **158**
Daedalea *158*
metachrous
Agaricus *406*
Clitocybe 397, **406**
metapodius
Agaricus 390
Hygrophorus 390
metatus
Agaricus 343
Mycena 343
mexicana
Ceriomyces 79
Clitocybe 398, **416**
Chanterel 167, **171**
Fuscoporella 6, **7**
Ganoderma *110*
Lenzites 130
Leptoporus 37
Russula 203, **222**
Schizophyllus *237*
Trametes 79, 131
Meyenii
Polyporus *26*
micaceus
Coprinus 385
Micheliana
Collybia 375
Micheneri
Agaricus 306, 351
Lentinus 294
Omphalia 351
Pleurotus 306
micromegas
Polyporus 45, *46*
Rigidoporus *46*, 100
microporus
Boletus 100
Hexagona *48*
Polyporus 100
microscopicus
Agaricus 317
Delicatula 317
microspermus
Gymnopus 353, **361**
Lentinus 294, *361*
microspora
Clitocybe 397, **411**
Collybia *355*
Gymnopus 352; **355**
microstomus
Polyporus *45*
Rigidoporus 45, **45**
miniato-olivaceus
Boletus *147*
Ceriomyces 137, **147**
miniatus
Agaricus *380*
Hydrocybe 376, 377, **380**, 381
Hygrophorus *381*
Omphalina 344, **350**
minima
Hiatula *309*, 425
Leptomyces 309, **309**
minor
Chanterel 167, **169**
minuscula
Lactaria 175, **189**
minutissima
Lactaria 200
Marasmius 254, **280**
Prunulus 320, **326**
minutulus
Agaricus *323*, 323
Hydrocybe 376, **380**
Hygrophorus *380*
Mycena *323*
minutus
Crepidopus 304, **304**
Marasmius 254, **280**
Pleurotus *304*
miratus
Agaricus *327*
Mycena *327*
Prunulus 320, **327**
mitis
Agaricus 303
Pleurotus 303
modestus
Boletus *134*
Russula 202, **210**
mollis
Antrodia 82, **82**
Crepidotus 303
Daedalea *82*
Irpex 15, *15*
Irpiciporus 15, **15**
molliusculus
Polyporus *26*
monadelphus
Agaricus *421*
Clitocybe *421*

mons-veneris
Funalia 78
montanus
Agaricus *347*
Hygrophorus 391, **395**
Marasmius 251, **266**
Mycena *347*
monticola
Gymnopus 354, **371**
morbifera
Clitocybe 418
Morgani
Boletus *138*
Chanterel 167, **170**
Polyporus *66*
Russula 202, **208**
Morganianus
Marasmius 285
Mori
Hexagona 47, *48*
Morrisii
Boletus *153*
Hygrophorus *394*
Suillellus 151, **153**
mucida
Lactaria 174, **181**
mucilaginosus
Hygrophorus 384
mugnaius
Agaricus *391*
Hygrophorus 391, **391**
multiceps
Clitocybe 397, **405**
Marasmius 286, *286*
Polymarasmius 286, **286**
multifidus
Agaricus *237*
multifolius
Heliomyces 247, **249**
Marasmius 252, **270**
multiformis
Clitocybe 397, **405**
Polyporus *93*
multiplex
Chanterel 171, *171*
Polyozellus **171**
multipunctus
Boletus *148*
muralis
Agaricus 351
Omphalia 351
murinifolia
Clitocybe 398, **414**
murinus
Agaricus 375
Collybia 375
Prunulus 321, **331**
Murraii
Boletus *160*
Murrayi
Schizophyllus *237*
Murrillii
Russula 202, **211**
muscigenus
Agaricus *165*
Chanterel 165, *165*
Dictyolus 165, **165**, 303
muscoides
Agaricus *170*
muscoides
Chanterel 167, **170**
musicola
Gymnopus 354, **370**
Marasmius 251, **260**
mustelina
Russula 202, **208**
mutabilis
Boletus 151
Lactaria 175, **199**
Polyporus *53*
mutilis
Agaricus 306
Pleurotus 306
myceliosus
Prunulus 321, **338**
myceniformis
Omphalopsis 311, **316**
Myrciae
Androsaceus *339*
Prunulus 322, **339**
myriadophyllus
Agaricus *363*
Collybia *363*
Gymnopus 353, **363**
myrrhinus
Polyporus *75*
nanus
Marasmius 250, **256**
nauseosus
Agaricus *232*
Leptoporus 37
Russula 204, **232**
Russulina *232*
nebularis
Agaricus 418
Clitocybe 396, 418
Polystictus *19*
nebulosus
Boletus 151
necator
Agaricus 179, *183*, 183
neglectus
Fomes *124*
nephridius
Polyporus *63*
nevadense
Ganoderma 118, **119**
nicaraguensis
Fuscosporia 4, **6**
Lentinus *291*
Polyporus 111
nidulans
Hapalopilus 80, *80*
Inonotus *80*
Polyporus *80*
niduliformis
Pleurotopsis 238, **238**
nidulus
Marasmius *239*
niger
Agaricus *242*
Melanoporia **15**
Pleurotus *242*
Polyporus 14, *15*
Resupinatus 240, **242**
nigrellus
Boletus *135*

nigrescens
Agaricus *206*
nigrescentipes
Russula 204, **226**
nigricans
Agaricus *206*, 207
Polyporus *103*
Russula 202, **206**
nigridius
Camarophyllus 385, **389**
Hygrophorus *389*
nigripes
Agaricus *277*
Heliomyces *277*
Lentinus *291*
Marasmius 253, **277**
Merulius *169*
nigrita
Agaricus *373*
Collybia *373*
Gymnopus 354, **373**
nigritiformis
Gymnopus 354, **371**
nigrocinerea
Coriolopsis 75, **77**
nigrodisca
Collybia *356*
Gymnopus 352, **356**
Russula 205, **235**
nigromarginatus
Boletus *24*
Coriolus 17, **24**, 28
niphetus
Pleurotus *300*
nitens
Fomes *123*
nitidum
Ganoderma 118, **123**
Hydrocybe 376, **378**
Hygrophorus *378*
Lactaria 174, **189**
Russula 236
Trametes *45*
nitratus
Agaricus 390
Hygrophorus 390
niveicolor
Clitocybe 398, **415**
Marasmius 250, **257**
Omphalina 344, **348**
niveipes
Prunulus 321, **332**
niveus
Agaricus *233*, 233, *377*
Boletus *139*
Camarophyllus *377*
Hydrocybe 376, **377**
Hygrophorus *377*
Merulius *163*
Plicatura 163, **163**
nivosellus
Tyromyces 30, **32**
nivosus
Polyporus *42*
Trametes 42, **42**
nivulosa
Collybia 375
nobilis
Boletus *142*
nobilis
Clitocybe 397, **404**
Novae-Angliae
Polyporus *103*
nuceus
Polystictus 28
nummularis
Boletus *62*
nuptialis
Marasmius 285
nutans
Amauroderma 115, **117**
Ganoderma *117*
Polyporus *117*
obconicus
Camarophyllus 385, **386**
Hygrophorus *386*
Lentinus 294
obducens
Poria *99*
obductus
Polyporus *32*
Tyromyces 30, **32**
obesa
Coltricia 91, **93**
Polystictus *93*
oblectans
Polyporus *91*
obliquiformis
Fomitiporia 8, **9**
obolus
Polyporus 54, **58**
obscura
Russula 204, **225**
obsoletus
Marasmius 251, **265**
obstinatus
Trametes *26*
obtusus
Polyporus *37*
obvolutus
Polyporus *94*
occidentalis
Coriolopsis 74, **75**
Polyporus 74, *75*
Prunulus 321, **337**
Spongipellis 37, **38**
ocellata
Trametes *84*
ochraceicinereus
Prunulus 321, **333**
ochraceus
Chanterel 171
Neurophyllum 171
Russula 236
ochroleuca
Collybia *359*
Russula 203, **218**
ochrophylla
Russula 204, **228**
ochrotinctellus
Coriolus 17, **22**
oculata
Clitocybe 398, **414**
Gymnopus 354, **371**
Lactaria 174, **189**
oculus
Agaricus *367*
Omphalia *367*
Gymnopus 353, **367**

odorifer
Agaricus *324*
Mycena *324*
Prunulus 320, **324**
odorus
Agaricus *406*
Polyporus *43*
Trametes *43*
oedematopus
Agaricus *195*
Oerstedii
Polyporus *115*
officinalis
Boletus *99*
Polyporus *99*
ohiensis
Favolus *48*
Fomes 95, **96**
Fomitiporia 8, **11**
Hygrophorus 385
Trametes 29, *96*
olearius
Agaricus *421*
Olneii
Marasmius 252, 254, **280**
olivaceus
Chanterel 172, *172*
Plicaturella **172**
Russula 236
olivarius
Agaricus *314*
Omphalia *314*
Omphalopsis 310, **314**
olivascens
Agaricus *223*, 223
Russula *223*
omalopilus
Polyporus *81*
omphalodes
Lentinus *289*, 294
omphalomorphus
Agaricus 294
oniscus
Agaricus 351
Omphalina 351
Polystictus *19*
opacus
Agaricus 418
Clitocybe 418
Marasmius 253, **278**
operculatus
Panus 247
orbiculata
Hexagona *83*
oreades
Agaricus *271*
Clitocybe 398, **414**
Marasmius *271*
Scorteus *271*
oregonensis
Clitocybe 397, **412**
Ganoderma 118, **119**
Geopetalum *299*
orizabensis
Gymnopus 354, **370**
Lentinus 289, **290**
Resupinatus 240, **241**
ornatipes
Boletus *146*
ostreatus
Agaricus *304*
Crepidopus 304, **304**
Pleurotus *304*, 306
Overholtsii
Clitocybe 396, **403**
pachycheiles
Polyporus *34*
pachypus
Polyporus 63
Palisoti
Daedalea *127*
Lenzites *127*
pallescens
Irpex *15*
Marasmius 251, **261**
Polyporus *40*
pallidocervinus
Polyporus *20*, *80*
pallidofulva
Daedalea *126*
Gloeophyllum *129*
Sesia *129*
pallidofulvellus
Coriolus 17, **20**
pallidus
Boletus *147*
Camarophyllus 385, **386**
Ceriomyces 137, **147**
Gymnopus 352, **355**
Hygrophorus *386*
Lactaria 200
Lentinus 308
Palmarum
Tyromyces 30, **32**
Palmeri
Pocillaria *292*
palmicola
Fuscoporella 6, **6**
Polyporus 6
paludicola
Prunulus 321, **336**
paludinella
Lactaria 174, **189**
paludosus
Hygrophorus 391, **393**
paluster
Agaricus *331*
Boletinellus 158, **158**
Boletinus *158*
Boletus *158*
Mycena *331*
Polyporus *31*
Prunulus 321, **331**
Russula 203, **222**
Tyromyces 30, **31**
papillatus
Marasmius 253, **276**
Omphalia *311*
Omphalopsis 310, **311**
papillosus
Marasmius 285
papyracea
Hexagona *83*
Polyporus 27
paraguariensis
Omphalia *316*
paraguayensis
Lentinus *293*

parasiticus
Boletus *141*
Ceriomyces 136, **141**
Clitocybe *421*
Versipellis *141*
Xerocomus *141*
pargamenus
Polyporus *27*
parvula
Clitocybe 396, **403**
Coltricia *92*
Ganoderma 118, **123**
Hydrocybe 376, **378**
Hygrophorus *378*
Lentinus 294
Polyporus *27*, *91*, 91
Prunulus 320, **323**
Russula 205, **235**
parvus
Boletus *153*
Lactaria 175, **190**
patellaris
Tectella **247**
patuloides
Agaricus 417
patulus
Lentinus *293*
paucifolius
Marasmius 251, **262**
pavonius
Boletus *25*
Coriolus 17, **25**
Cyclomycetella *25*, *85*
paxilloides
Russula 203, **218**
Peckianus
Camarophyllus 385, **389**
Hygrophorus *389*
Polystictus *70*
Peckii
Boletus *144*
Ceriomyces 137, **144**
Clitocybe 397, **412**
Heliomyces 247, **248**
Hydrocybe 376, **379**
Hygrophorus *379*
Lactaria 175, **191**
Marasmius 250, **254**
Trametes *79*
pectinatoides
Russula 203, **214**
pectinatus
Prunulus 321, **333**
Russula 203, **213**, 236
pelianthinus
Agaricus *332*
pelleporus
Boletus *40*
pelliculosus
Agaricus 243
pellitus
Polyporus *84*
peltigerinus
Agaricus *405*
Clitocybe 397, **405**
penarius
Hygrophorus 395
pendula
Peziza 47, *47*
pendula
Porodisculus **47**
Porodiscus *47*
pereffusa
Fomitiporia 8, **10**
perennis
Boletus *92*
Coltricia 91, **92**
Pelloporus *92*
Polyporus *92*
Polystictus *92*
perforans
Agaricus *277*
Marasmius 253, **277**
pergamenus
Agaricus *176*
Lactaria 173, **176**
peronatus
Agaricus *271*
Marasmius 252, **271**
perplexus
Inonotus 86, **88**
Polyporus *88*
perpusillus
Agaricus 303
Fomes 29
Pleurotus 303
Polyporus 29
Perrottetii
Polyporus *79*
persicinus
Polyporus *67*
Scutiger 64, **67**
personata
Lepista 419
Marasmius 251, **259**
Persoonii
Polystictus *45*
pertenuis
Inonotus 86, **87**
perzonatum
Ganoderma 118, **121**
petaliformis
Polyporus *53*
petaloides
Agaricus *300*
Geopetalum 298, **300**, 303
Pleurotus *300*, 300
petasiformis
Omphalopsis 311, **316**
Petersii
Chanterel 167, **168**
Trametes *81*
petiolorum
Marasmius 250, **255**
phaeoxanthus
Polyporus 54, **58**
phaeus
Marasmius *267*
pholiotoides
Lentinus *291*
phyllophiloides
Clitocybe 396, **401**
phyllophilus
Agaricus *402*
Clitocybe 396, **402**
Marasmius 252, 253, **278**
physcopodius
Agaricus *358*
Collybia *358*

physcopodius
Gymnopus 352, **358**
piceina
Clitocybe 418
Lentinus *289*
Polyporus *111*
picipes
Marasmius 251, **260**
pictus
Boletinus 159, **160**
Boletus *160*
pileolarius
Agaricus 418
Clitocybe 418
pilosus
Agaricus 246
Lentinus 246
Pilotae
Aurantiporus **72**
Polyporus 71, *72*
pilularius
Agaricus *365*
Collybia *365*
Gymnopus 353, **365**
Pini
Boletus 111, *111*
Daedalea *111*
Polyporus *111*
Porodaedalea **111**
Trametes *111*
piniarius
Agaricus 418
Clitocybe 418
Pini-canadensis
Polyporus *72*
pinicola
Boletus *98*
Fomes *98*
Fomitopsis *98*
Polyporus *98*
pinophilus
Agaricus *408*
Clitocybe 397, **408**
pinsitus
Agaricus 303
Coriolus 17, **24**
Pleurotus 303
Polyporus *24*
piperatus
Agaricus 176, *176*
Boletus *143*
Ceriomyces *143*
Ixocomus *143*
Lactaria 173, **176**
Leccinum *143*
Viscipellis *143*
pithyophilus
Agaricus *399*
Clitocybe 396, **399**
pityreus
Irpex *16*
placentaeformis
Polystictus 28
plancus
Marasmius 285
planellus
Coriolus 17, **21**
planus
Agaricus 303
planus
Pleurotus 303
Polyporus *21*
platyphyllus
Agaricus *367*
Collybia *367*
Gymnopus 353, **367**
Lactaria *180*
platypoda
Lenzites *127*
plicatulus
Marasmius 254, **282**
plinthogalus
Agaricus *194*
Lactaria 175, **194**
plumbea
Daedalea *125*
Lactaria 200
Polyporus *46*
Vaginata 306, 375
plumbeibrunneus
Prunulus 321, **338**
plumbosus
Polystictus 28
Plumierii
Heliomyces 284
Pocono
Boletus 151
poculum
Agaricus *409*
Sphaeria *47*
polychromum
Ganoderma 118, **119**
Polyporus *119*
polygrammus
Agaricus 343 .
Hexagona *83*
Mycena 343
Polyporus *53*, *83*
polyphyllus
Marasmius 252, **269**
Russula 202, **207**
polyporoides
Marasmius 251, **266**
Polyporus
Boletus *56*
Polyporus 54, **56**
pometi
Agaricus 306
Pleurotus 306
ponderosus
Fomes *98*
populinus
Boletus *99*
Fomes 95, **99**
poripes
Grifola 68, **68**
Polyporus *68*
porosus
Boletinus *158*
Paxillus *158*
porphyrellus
Agaricus 418
Clitocybe 418
porphyritis
Polyporus *53*
Microporellus 53, **53**
porrigens
Agaricus *300*

porrigens
Geopetalum *300*
Pleurotus *300*
portoricensis
Hexagona 48, **51**
Marasmius 251, **262**
Poria *74*
praeacutus
Marasmius 253, 254, **277**
praeceps
Agaricus 374
praedecurrens
Marasmius 250, **257**
Mycena *314*
Omphalopsis 311, **314**
praefoliatus
Agaricus *367*
praelongus
Agaricus *330*
Ganoderma 118, **121**
Mycena *330*
Prunulus 320, **330**
praerimosus
Pyropolyporus 102, **105**
praetortipes
Marasmius 250, **258**
prasiosmus
Agaricus *269*
Marasmius 252, **269**
pratensis
Agaricus *387*
Camarophyllus *387*
Hydrocybe *387*
Hygrophorus *387*
princeps
Chanterel *168*
Favolus *48*
Hexagona 47, **48**
proboscideus
Lentinus 246
proletarius
Marasmius 250, **256**
prolificans
Coriolus 18, **27,** 28
Polyporus *27*
protracta
Lenzites *129*
proximus
Lentinus *295*
Lenzites *126*
pruinatus
Marasmius 285
pruinosifolius
Marasmius 251, **265**
pruinosulus
Marasmius 250, **258**
pruinosus
Agaricus 419
Chanterel 167, **167**
Clitocybe 419
Marasmius 285
prunicola
Fomitiporia 8, **9**
pseudogrisea
Omphalopsis 311, **314**
pseudopargamenus
Polyporus *27*
pseudoprinceps
Hexagona 47, **49**
pseudopurus
Agaricus 343
Mycena 343
pseudosenex
Polyporus 111
Pyropolyporus 102, **107**
psittacinus
Agaricus *380*
Hydrocybe 376, **380**
Hygrophorus *380*
puberula
Bjerkandera 40, **41**
Daedalea *41*
pubescens
Agaricus *299*, 299
Boletus *18*
Coriolus 17, **18,** 28
Lactaria 200
Leptoporus *19*
Pleurotus 309
Polyporus *18*
Prunulus 322, **341**
pubescentipes
Omphalia *313*
pudorinus
Agaricus *393*
Hygrophorus 391, **393,** 396
puellaris
Russula 204, **230**
Russulina *230*
pulcherrimus
Agaricus *326*
Clitocybe 397, **404**
Lentinus 294
Mycena *326*
Prunulus 320, **326,** 342
pulcherripes
Marasmius 254, **284**
pulchralis
Russula 236
pulchrifolius
Chanterel 167, **167**
pulverulentum
Ganoderma 118, **121**
Russula 203, **215**
pulvinatus
Agaricus 306
Pleurotus 306
punctata
Russula 236
punctipes
Boletus *153*
puniceus
Agaricus *381*
Hydrocybe 376, **381**
Hygrophorus *381*
purgans
Boletus *99*
purpurascens
Agaricus 396
Favolus *50*
Hexagona 48, **51**
Hiatula *310*, 425
Hygrophorus 396
Leptomyces 309, **310**
Marasmius 252, **267**
purpureofuscus
Agaricus *333*
Mycena *333*

purpureofuscus
Polystictus *81*
Prunulus 321, **333,** 343
purpureus
Marasmiellus 243, **244**
purpurina
Russula 205, **232**
purus
Agaricus *332*
Hydrocybe 376, **377**
Hygrophorus *377*
Mycena *332*
Prunulus 321, 322, **332;** 343, 419
Trametes *36*
pusilla
Clitocybe 397, **411**
Hydrocybe 376, **377**
Hygrophorus *377*
Inonotus 86, **87**
Russula 204, **229**
pusillissima
Omphalia *311*
Omphalopsis 310, **311**
pusio
Marasmius 285
Polystictus *27*
putidus
Polyporus 63
putredinis
Agaricus 306
Marasmius 251, **265**
Pleurotus 306
pyramidatus
Lentinus 289, **291**
pyrinus
Marasmius 254, **281**
pyrogalus
Agaricus *178*
Lactaria *178*
pyrrhocephalus
Marasmius 285
pyxidatus
Agaricus *346*, 346
Omphalia *346*
Omphalina *346*
Queletii
Hygrophorus 396
Russula 203, **218,** 221, 236
quercinus
Agaricus 125, *125*
Daedalea 125, **125**
quietus
Agaricus *188*
Lactaria 174, 188, **188**
racodium
Agaricus 243
radiatus
Agaricus *237*
Boletus *90*
Polyporus *90*
Inonotus 86, **90**
radicans
Boletus *153*, 153
radicatellus
Agaricus *323*
Mycena *323*
Prunulus 320, **323**
radicatus
Agaricus *366*
radicatus
Gymnopus 353, **366,** 418
Polyporus *66*
Scutiger 64, **66**
radiciperda
Trametes *97*
radicosus
Boletus 151
radiozonarius
Agaricus 419
Clitocybe 419
radius
Agaricus 343
Mycena 343
ramealis
Agaricus *279*
Collybiopsis *279*
Marasmius 254, **279**
ramosa
Collybia 375
ramosissimus
Boletus *69*
Cladomeris *69*
Grifola 68, **69**
ramulinus
Marasmius 253, **278**
rancidula
Clitocybe 419
Tricholoma 419
Raoultii
Russula 203, **218**
Ravenelii
Boletus 156, *157*
Cerrenella 73, **73**
Chanterel *169*
Daedalea *73*
Hygrophorus 390
Lentinus *296*
Polyporus *53*
Polystictus *19*
Pulveroboletus **157**
recurvatus
Camarophyllus 385, **388**
Hygrophorus *388*
reflexa
Pocillaria 295
regalis
Lactaria *179*
regularis
Clitocybe 396, **399**
regulicolor
Amauroderma 115, **116**
Fomes 115, *116*
renatum
Amauroderma 115, **117**
Polyporus *117*
reniformis
Elfvingia *114*
Hexagona 48, **50**
Polyporus *114*
repanda
Daedalea *127*
Lenzites *127*
repens
Agaricus *367*
representanea
Lactaria 174, **183**
resimus
Agaricus *179*

resimus
Lactaria 174, 176, **179**
resinosus
Boletus *82*
Ischnoderma 82, *82*
Marasmius 253, **276**
Polyporus *97*
resupinatus
Boletus *101*
reticeps
Lentinula 309
reticulatus
Boletus *83*, 83
Merulius *166*
retipes
Boletus *146*
Ceriomyces 137, **146**
Polyporus *65*
Scutiger 64, **65**
retirugus
Chanterel *166*
Dictyolus 165, **166,** 166
Elvela *166*
Merulius *166*
revoluta
Clitocybe *420*
Monadelphus 420, **420**
rhabarbarina
Daedalea *130*
Lenzites *130*
Marasmius *267*, *361*
Polyporus 111
rheicolor
Agaricus *361*
Polyporus *72*
rhodocephalus
Marasmius *267*
Rhododendri
Agaricus *311*
Omphalia *311*
Omphalopsis 310, **311**
rhyssosporus
Agaricus 318
Omphalia 318
ribesius
Polyporus *108*
Ribis
Boletus *108*
Pyropolyporus 102, **108**
Richardsonii
Polyporus 28
rigens
Polystictus *75*
rigida
Coriolopsis 74, **75**
Marasmius 286
Trametes *75*
rigidulus
Lentinus *292*
rimosellus
Boletus 151
Lactaria 175, **198**
ringens
Scytinotus 239
rivulosus
Agaricus 419
Clitocybe 419
Robiniae
Pyropolyporus 102, **105**
robiniophila
Trametes 42, **42**
Robinsoniae
Clitocybe 396, **400**
Pyropolyporus 102, **108**
Russula 203, **221**
Robinsonii
Lentinus 294
Panus 246
robustus
Boletus *141*, 141, 151
Clitocybe 396, **403,** 417
roriduliformis
Omphalopsis 311, **317**
roridulus
Agaricus *339*
Mycena *339*
Prunulus 322, **339**
roridus
Agaricus 317
Mycena 317
roseibrunneus
Hygrophorus 391, **394**
roseilividus
Gymnopus 354, **373**
roseipallens
Prunulus 320, **324**
roseipes
Russula 204, **227**
rosellus
Agaricus *324*, 324
Chanterel 167, **170**
Mycena *324*
roseocandidus
Agaricus *323*
Mycena *323*
Prunulus 320, **323**
roseocinereus
Pyropolyporus 102, **104**
roseolus
Prunulus 320, **324**
roseotinctus
Boletus *144*
roseo-violascens
Agaricus *184*
roseus
Boletus *95*
Fomes 95, **95**
Fomitopsis *95*
Hydrocybe 377, **382**
Hygrophorus *382*
Polyporus *95*
rotula
Agaricus *282*
Marasmius 254, **282**
Roxanae
Boletus *148*
Ceriomyces 137, **148**
rubeolarius
Boletus *151*
ruber
Agaricus *218*, 228
Amanita *234*
Hydrocybe 376, **379**
Hygrophorus *379*
Russula *218*
rubescens
Daedalea *126*
Russula 204, **226**

rubescens
Trametes *126*
rubescentifolius
Agaricus *359*
rubeus
Boletus *147*
rubiginosus
Boletus *82*
rubinellus
Boletus *152*
Suillellus 151, **152**
rubriochracea
Russula 202, **211**
rubritinctus
Fomes 95, **99**
Heliomyces 247, **249**
rubromarginatus
Agaricus 343
Mycena 343
rubrophyllus
Marasmius 252, 253, **271**
rubropunctus
Boletus *143*
Hygrophorus 391, **392**
rubrotincta
Russula 204, **229**
rudis
Panus *292*
Polyporus 45
rufitincta
Fuscoporia 4, **5**
Poria *5*
rufo-atratus
Polyporus *62*
rufoflavus
Flaviporus 84, **84**
Polyporus 84, *84*
rufo-pallidus
Polyporus *95*
rufopictus
Polystictus *46*
rufula
Lactaria 175, **192**
rufus
Agaricus *192*
Lactaria 175, 191, **192**
rugosiceps
Boletus *148*
rugosipes
Clitocybe 397, **413**
rugosoceps
Collybia *360*
Gymnopus 353, **360**
rugosodiscus
Agaricus *318*
Galactopus 318, **318**
Mycena *318*
Omphalia *318*
rugosoides
Mycena *334*
Prunulus 321, **334**
rugosus
Agaricus 343
Mycena 343
rugulosus
Marasmius 251, **260**
Russula 205, **234**
Russellii
Boletus *137*
Russellii
Ceriomyces 136, **137**
rusticanus
Agaricus *178*, *347*
Lactaria 174, **178**
Omphalia *347*
Omphalina 344, **347**
rutilans
Boletus *80*
Hapalopilus 80, **80**
Polyporus *80*
rutilantiformis
Prunulus 321, **334**
Sabali
Prunulus 320, **325**
saccharinus
Marasmius 286
saccharium
Lactaria 200
saepiarius
Agaricus *130*
Daedalea *130*
Lenzites 128, *130*
Sagraeanus
Fomes 95, **96**
Polyporus *96*
salicinus
Boletus *108*, 108
Panus *241*
salignus
Agaricus 306
Marasmius 253, **276**
Pleurotus 306
Polyporus *41*
salmonea
Lactaria 175, **195**
salmonicolor
Boletus *155*
sanguinalis
Lactaria 200
sanguineus
Agaricus *221*, *350*, 350
Boletus *71*
Daedalea *45*
Marasmius *267*
Omphalia *350*
Polyporus *71*
Polystictus *71*
Pycnoporus 71, **71**
Russula 203, **221**
Xylometron *71*
sanguinolentus
Agaricus *319*
Galactopus 318, **319**
Mycena *319*
sapidus
Agaricus *305*, 305
sarcitus
Polyporus *110*
Pyropolyporus 102, **110**
sarmentosus
Marasmius *286*
Polymarasmius 286, **286**
Sartwellii
Polyporus *27*
Satanas
Boletus *151*
scabellus
Agaricus *287*

scabellus
Crinipellis 287, **287**
Melanopus *63*
Polyporus 55, **63**
scaber
Boletus *139*
Ceriomyces *139*
Gyroporus *139*
Krombholzia *139*
Leccinum *139*
scabriceps
Polyporus 54, **56**
scabripes
Boletus *148*
Ceriomyces 137, **148**
Prunulus 320, **331**
scabriusculus
Agaricus *359*
Omphalia *359*
scabrosus
Polyporus *45*
scalaris
Polyporus *29*
scarrosus
Polyporus *26*
Schomburgkii
Lentinus *291*
Schulzeri
Polyporus *37*
Schweinitzii
Cladomeris *90*
Phaeolus 90
Polyporus *90*
Polystictus *90*
sciophana
Hydrocybe 376
sclerodermeus
Polyporus *114*
sclerodes
Polyporus 111
scleromyces
Polyporus 111
scorodonius
Marasmius *281*
scorteus
Polyporus *75*
scrobiculatus
Agaricus *179*
Lactaria 174, **179**
scutatus
Coriolus 17, **25**
Fomes 95, **96**
scutellatus
Polyporus *96*
scyphoides
Agaricus *345*
Lentinus 289, **290**
Omphalia *345*
Omphalina *345*
sector
Boletus *19*
Coriolus 17, **19,** 28, 100
semicaptus
Agaricus *299*
Geopetalum 298, **299**
Pleurotus *299*
semihaerens
Agaricus 374
semihirtipes
Marasmius 253, **274**
semiovatus
Boletus *98*
semipileatus
Polyporus *35*
Tyromyces 31, **35**
semiplicatus
Polystictus *23*
semisquarrosus
Marasmius *272*
semisupinus
Agaricus 303
Pleurotus 303
Polyporus *34*
Tyromyces 31, **34**
semitectus
Agaricus *302*
Geopetalum 298, **302**
Pleurotus *302*
semiustus
Marasmius *262*
semivestipes
Omphalia *334*
Prunulus 321, **334**
sensibilis
Boletus *147*
separans
Boletus *142*
sepium
Coriolellus 28, **28**
Trametes 28, *28*
septicus
Agaricus *299*
Geopetalum 298, **299,** 303
Pleurotus *299*
Sequoiae
Coriolellus 28, **29**
Ganoderma 118, **119**
Trametes *29*
Sequoiarum
Omphalina 344, **347**
serialis
Coriolellus 28, **29**
Polyporus *29*
Trametes *29*
sericea
Hexagonia *25*
sericeohirsutus
Coriolus 17, **25,** 27
Polyporus *25*
sericeonitens
Russula 205, **233**
sericipes
Marasmius 252, **268**
serifluus
Agaricus *199*
Lactaria 175, **199**
serissima
Russula 202, **212**
serotinoides
Agaricus *304*
serotinus
Agaricus *304*
Boletus *155*
Crepidopus 304, **304**
Hygrophorus 391, **392**
Merulius *165*
Omphalia *314*
Omphalopsis 311, **314**
Pleurotus *304*

serpens
Merulius *163*, 163
serpentarius
Polyporus *97*
sessile
Ganoderma 118, **120**
setiger
Lentinus *292*
Poria *90*
setipes
Agaricus 351
Omphalina 351
setisedus
Agaricus 419
Clitocybe 419
setulosipes
Marasmius 250, **257**
setulosus
Gymnopus 354, **373**
Shaferi
Fuscoporella 6, **7**
Shiraianus
Polyporus *70*
siccus
Agaricus *283*
Marasmius 254, **283**
sienna
Agaricus 420
Tricholoma 420
similis
Hexagona *83*
Pleurotus *305*
simillima
Collybia *362*
Polyporus 94
Russula 203, **219**
simulans
Bjerkandera 42
Pocillaria *292*
Polyporus *42*
sinopicoides
Clitocybe *407*
sinopicus
Agaricus *407*
Clitocybe 397, **407**, 419, 420
sinuatus
Gymnopus 352, **357**
sinuosus
Irpex *15*
siparius
Lentinus *292*
Sistotrema
Boletus *143*
sistotremoides
Boletus *90*
Phaeolus **90**
Romellia *424*
siticulosa
Collybia 375
Smallii
Tyromyces 30, **32**
sobrius
Coriolus 18, **26**
Polyporus *26*
socialis
Agaricus 419
Clitocybe 419
soliformis
Marasmius 251, **261**
sordidulus
Polyporus 81
sordidus
Boletus *149*
Ceriomyces 137, **149**, 151
Hygrophorus 390, **391**
Lactaria *183*
Polyporus *33*, 81, 101
Russula 202, **206**
sororia
Russula 236
sparsibarbis
Lentinus *292*
spathulatus
Agaricus *300*
Boletus *93*
Coltricia 91, **93**
speciosus
Agaricus 72, *72*
Boletus *144*
Ceriomyces 137, **144**
Hygrophorus 391, **393**
Lactaria 174, **183**
Laetiporus **72**
Polypilus *72*
spectabilis
Boletinus 159, **160**
Polyporus *90*
sphaerosporus
Agaricus 351
Boletus 154, **155**
Camarophyllus 385, **386**
Chanterel *168*
Clitocybe *421*
Hygrophorus *386*
Monadelphus 420, **421**
Omphalia 351
sphagnicola
Agaricus 351
Omphalia 351
sphagnophila
Omphalia *345*
Russula 204, **230**
spinuliferus
Agaricus *360*
splendens
Agaricus 419
Clitocybe 419
Polyporus *92*
splendidipes
Mycena *330*
Prunulus 320, **330**
Splitgerberi
Flaviporellus **72**
Polyporus 72, *7*
spodoleucus
Marasmius 238
spongia
Polyporus *90*
spongiosus
Boletus *86*
Marasmius 252, 253, **272**
Sistotrema *37*
Spragueii
Agaricus 374
Boletus *151*, 151, 160
Polyporus *33*
Tyromyces 31, **33**

spretus
Lentinus *296*
Sprucei
Daedalea 125, **125**
spumeus
Spongipellis 37
spurcus
Polyporus *81*
squalida
Russula *212*
squamifolia
Crinipellis 287, **288**
squamiger
Gymnopus 352, **356**
squamosum
Lentodium 294, 296, **296**
squamosus
Boletus *60*
squamula
Agaricus *277*
Marasmius 253, **277**, 286
squamulosus
Agaricus *296*, 406
Boletus *147*, 147
Camarophyllus 385, **388**
Clitocybe *406*
Hygrophorus *388*
Lentodium 296, *296*
squarrosus
Boletus *157*
stellatus
Agaricus 352
Omphalina 352
stenophyllus
Hygrophorus 385
Marasmius 251, **262**
stereinus
Polyporus *46*
stereocephalus
Agaricus 374
stereoides
Daedalea *124*
Trametes *82*
stipitarius
Agaricus *287*
Collybia 287
Polyporus *60*
stipitata
Clitocybe 397, **412**
Fomes *122*
Ganoderma 118, **122**
stolonifer
Collybia 375
straminipes
Marasmius 254, **283**
stratosus
Pleurotus *300*
striaepileus
Agaricus 352
Omphalina 352
striatulus
Agaricus *242*
Favolus *48*
Hexagona 47, **48**
Lentinus *293*
Pleurotus *242*
Resupinatus 240, **242**
striatus
Agaricus *129*
striatus
Daedalea *129*
Gloeophyllum 129, **129**, 130
Heliomyces 247, **248**
Lenzites *129*
Sesia *129*
stricta
Russula 204, **224**
strictipes
Collybia *357*
Gymnopus 352, **357**, 375
strigellus
Lentinus 289, **292**
strigosus
Agaricus *292*
Lentinus 289, **292**
Panus *293*
strobilaceus
Boletus *157*
Eriocorys *157*
Strobilomyces **157**
strobiliformis
Boletus *157*
strobilinoides
Mycena *337*
Prunulus 321, **337**
strombodes
Agaricus *346*
Omphalia *346*
Omphalina 344, **346**
stupens
Lentinus *291*
stupparius
Agaricus *288*
Crinipellis 287, **288**
stuppea
Funalia 78, **79**
Trametes *79*
stygius
Boletus *157*
stylobates
Agaricus 343
Marasmius 250, **257**
Mycena 343
stypticus
Agaricus *244*
Panellus 244, **244**
Panus *244*
suaveolens
Boletus *43*
Polyporus 42, *43*
Trametes 42, **43**
suavissimus
Lentinus 288, **289**
subalbellus
Gyroporus 133, **134**
subalutacea
Russula 204, **227**
subaureus
Boletus *154*
Rostkovites 153, **154**
subavellaneus
Gymnopus 354, **372**
Heliomyces 247, **248**
Omphalopsis 311, **317**
subbarbatulus
Resupinatus 240, **241**
subbarbatus
Agaricus *242*

subbarbatus
Pleurotus *242*
Resupinatus 240, **242**
subbulbipes
Clitocybe 397, **404**
subcaespitosa
Hydrocybe 377, **384**
Hygrophorus *384*
subcandicans
Clitocybe 397, **412**
subcantharelloides
Panellus 244, **245**
subcantharellus
Agaricus *169*
subcaperata
Hexagona 48, **50**
subcartilaginea
Omphalina 344, **345**
subcervinus
Lentinus *292*
subchartaceus
Coriolus 17, **24**
subcinereus
Polyporus *40*
subclavata
Omphalia *347*
Omphalina 344, **347,** 351
subclavipes
Clitocybe 397, **407**
subcoeruleus
Agaricus *323*
subconcava
Clitocybe 397, **408**
subconnexa
Clitocybe 396, **403**
subcoracinus
Marasmius *260*
subcoriacea
Cerrenella 73, **74**
subcyathiformis
Clitocybe 396, **401**
Marasmius 252, **269**
subdepallens
Russula 204, **226**
subdicolor
Clitocybe 397, **411**
subditopoda
Clitocybe 397, **406**
subdryophila
Collybia 375
subdulcis
Agaricus *198*
Lactaria 175, **198**
subectypus
Coriolus 17, **22**
subelatinum
Geopetalum 298, **301**
Urospora 303
subelegans
Polyporus 55, **62**
suberosus
Boletus *40*, *44*, 80, *80*
Piptoporus **44**
subexcavatum
Micromphale 307, **308**
subferreus
Fomes 95, **97**
subflabellatus
Panus *302*
subflavescens
Gymnopus 354, **373**
subflavida
Hydrocybe 377, **383**
Hygrophorus *383*
subflavifolius
Gymnopus 353, **359**
subflavus
Polyporus *27*
subflexibilis
Polyporus 111
subfomentarius
Fomes *114*
subfornicatum
Ganoderma 118, **121**
subfragilis
Russula 205, **233,** 235
subfulvus
Polyporus 45
subfumosipes
Clitocybe 397, **411**
subfumosus
Prunulus 320, **328**
subgiganteus
Polyporus *69*
subglaber
Polystictus *81*
subglabrescens
Coriolopsis 1, 75, **77**
subglabripes
Boletus *148*
Ceriomyces 137, **148**
subglobosus
Marasmius 250, **256**
subgrisea
Omphalia 318
subhaedinum
Geopetalum 298, **302**
subhepaticus
Agaricus 318, *346*
Omphalina 344, **346,** 351
subhirtus
Agaricus *404*
Clitocybe 397, **404**
subiculosus
Fuscoporia 4, **4**
Polyporus *4*
subimmaculata
Omphalopsis 311, **315**
subincarnatus
Agaricus *325*
Mycena *325*
Prunulus 320, **325**
subincrustatum
Ganoderma 118, **122**
subinsulsa
Lactaria 200
subinversa
Clitocybe 398, **413**
subinvolutus
Agaricus 419
Clitocybe 419
sublatericius
Gymnopus 354, **369**
sublilacinus
Coriolus 17, **25**
Hapalopilus 80, **80**
Mucronoporus *80*

sublinteus
Pyropolyporus 103, **110**
sublivida
Crinipellis 287, **287**
subluteus
Boletus *155*
Coriolus 17, **19**
Polyporus *19*
submarmoreus
Agaricus *403*
Clitocybe 396, **403**
submembranaceus
Lentinus *293*
subminiata
Hydrocybe 377, **383**
Hygrophorus *383*
submulticeps
Polymarasmius 286, **286**
submurina
Trametes 42, **43**
subnigricans
Clitocybe 396, **402**
subnivosa
Trametes 42, **43**
subnivulosus
Gymnopus 354, **372**
subnudus
Marasmius 252, 253, **271,** 285
subolivascens
Russula 203, **223**
Polyporus *101*
subpallidus
Ceriomyces 137, **145**
subpectinatus
Pyropolyporus 102, **109**
subpellucidus
Agaricus *316*
subpileatus
Polyporus *97*
subpilosus
Marasmius 253, **275**
subplexifolius
Marasmius 251, **263**
subpratensis
Hygrophorus 391, **395**
subpruinosus
Marasmius 251, **266**
subpulverulentus
Prunulus 322, **339**
subpunctipes
Boletus *134*
subpurpurascens
Hexagona 48, **51**
subpurpurea
Lactaria 174, **187**
subpustulatus
Hygrophorus *394*
subradicatus
Scutiger 64, **66**
subrenatum
Amauroderma 115, **117**
subrigua
Collybia 375
subrotula
Marasmius 250, **259**
subrufescens
Camarophyllus 385, **378**
Hygrophorus *387*
subrugosus
Gymnopus 354, **368**
subsanguineus
Boletus *145*
Ceriomyces 137, **145**
subsapidus
Crepidopus *304*
subscyphoides
Lentinus 289, **290**
Omphalina 344, **348**
subsepticum
Geopetalum *299*
subsericeus
Polyporus *92*
subseriflua
Lactaria *198*
subsimilis
Clitocybe 419
subsimulans
Bjerkandera 40, **42,** 81
subsocialis
Clitocybe 419
subsordida
Russula 202, **206**
subspodoides
Heliomyces 247, **248**
subsquamata
Clitocybe 397, **406,** 419
substereinus
Rigidoporus 45, **46**
substipitatus
Coriolus 17, **22**
substrigosus
Lentinus *292*
substuppeus
Polyporus *40*
Spongipellis 37, **40**
subsulphurea
Collybia *359*
Gymnopus 352, **359**
subtenerrimus
Marasmius 250, **255**
subtenuipes
Prunulus 321, **334**
subtomentosus
Boletus *92, 149*
Ceriomyces 137, **149**
Daedalea *126*
Lactaria 175, **195**
Leccinum *149*
Marasmius 253, **275**
Rostkovites *149*
Versipellis *149*
Xerocomus *149*
subusta
Russula 202, **207**
subvellerea
Lactaria 173, **177**
subvelutina
Lactaria 175, **197**
Russula 202, **210**
subvelutipes
Boletus *151*
subvenosus
Marasmius *277*
subviolaceus
Hygrophorus 391, **393**
subzonalis
Agaricus *408*
succosus
Agaricus *318*
Galactopus 318, **318**

succosus
Mycena *318*
sudorifica
Clitocybe 418, 419
suffrutescens
Lentinus *296*
sulcatipes
Marasmius 251, **259**
Russula 204, **225**
sulcatus
Fomes *97*
Ganoderma 118, **120**
Lentinus 289, **291**
sulfureoides
Agaricus 309
Pleurotus 309
Sullivantii
Boletus *151*
Lentinus 294
Marasmius 286
Panus 247, 376
Polyporus *19*
sulphuratus
Polyporus *72*
sulphureus
Boletus *72*
Clitocybe 420
Marasmius 286
Polypilus *72*
Polyporus *72*
Sumstinei
Grifola 68, **68**
Lactaria 175, **194**
superficialis
Boletus 6
supinus
Boletus 100, *101*
Fomitella 1, 101, **101**
surinamensis
Polyporus *46*
Rigidoporus 45, **46**
Sutliffae
Marasmius 252, **273**
Swartzianus
Polyporus 77
Swartzii
Lentinus *291*
Omphalia *314*
sylvaticus
Agaricus *234*
symphyton
Sistotrema *27*
synodicus
Agaricus *257*
Marasmius 250, **257**
syringeus
Prunulus 322, **341**
tabacinus
Boletus *144*
Ceriomyces 137, **144**
Cerrenella *73*
Irpex 73, *73*
tabulaeformis
Polyporus *90*
Tagetes
Agaricus *313*
tageticolor
Marasmius 252, **267**
Tanghiniae
Lentinus *293*
tardus
Agaricus 420
Clitocybe 420
Taxodii
Hexagona *52*
Taylori
Coriolopsis 74, **76**
telmatida
Omphalia 317
tenacella
Collybia 375
tenebrarum
Marasmius 251, **260**
tenebricosa
Clitocybe 396, **402**
tener
Lentinus *291*
Marasmius 286
Polyporus *24*
tenerrimus
Agaricus *322*
Marasmius *262*
Mycena *322*
Prunulus 319, **322**
tenuiceps
Russula 425
tenuiculus
Boletus 151
Prunulus 321, **334**
tenuifolius
Gymnopus 352, **358**
tenuipes
Agaricus *361*
Collybia *361*, 376
Gymnopus 353, 354, **361**
Russula 203, **219**
tenuis
Boletus *83*
Favolus 83, **83**
Hexagona *83*
Lenzites 128
tepeitensis
Omphalina 344, **348**
tephroleucus
Hygrophorus 396
terebrans
Bjerkandera 40, **42**
Polyporus *42*
terrestris
Heliomyces 247, **247**
Pleurotus 309
tessellatula
Hexagona 48, **50**
tessellatus
Agaricus 309
Pleurotus 309
testaceoflava
Clitocybe 398, **416**
testaceus
Agaricus *195*
Prunulus 322, **341**
texanus
Inonotus 86, **88**
Pyropolyporus 102, **104**
texensis
Agaricus *356*
Collybia *356*
Gymnopus 352, **356**
theiogalus
Agaricus *187*

theiogalus
Lactaria 174, **187**
theobromicola
Marasmius 250, **255**
thujinus
Marasmius 254, **281**
Thwaitesii
Hexagona *83*
tigrinus
Agaricus *296*
Lentinus *296*
Lentodium 296, **296,** 308
tiliophila
Tyromyces 31, **33**
tintinnabulum
Agaricus 343
Mycena 343
tomentellus
Marasmius *286*
tomentipes
Boletus *149*
Ceriomyces 137, **149**
tomentosipes
Marasmius 253, **278**
tomentoso-quercinus
Polyporus *37*
tomentosus
Agaricus *179*, 179
Coltricia 91, **93**
Mucronoporus *93*
Onnia *93*
Pelloporus *93*
Polyporus *93*
Xanthochrous *93*
torminosus
Agaricus *178*
Hypophyllum 192
Lactaria 174, **178**
tornata
Elfvingia 113, **115**
Polyporus *115*
tortipes
Gymnopus 353, **361**
Marasmius 251, **264**
tortuosa
Daedalea *124*
torulosus
Agaricus *289*
Panus *289*
trabeus
Agaricus *129*
Daedalea *129*
Gloeophyllum 129, **129**
Lenzites *129*
trachyodon
Hydnum *74*
trachypus
Polyporus *62*
translucens
Heliomyces 247, **247**
translucentipes
Omphalopsis 310, **312**
tremelliforme
Geopetalum 298, **302**
tremulus
Agaricus 303
Pleurotus 303
Tricholoma
Polyporus 55, **60**
trichomalla
Funalia *79*
Polyporus 79, *79*
Trichaptum **79**
trichopus
Agaricus 374
trichrous
Polyporus 37
tridentinus
Boletus 156
triqueter
Polyporus *93*
trivialis
Agaricus *181*
Lactaria 174, **181**
troglodytes
Panus 295
trojana
Clitocybe 398, **416**
Hydrocybe 377, **383**
Hygrophorus *383*
Marasmius 251, **263**
Prunulus 322, **339**
tropicalis
Fomes *8*
Fomitiporia 8, **8**
trullisatipes
Marasmius 252, **273**
trullisatus
Agaricus *407*
Clitocybe 397, **407**
Gymnopus 353, **367**
truncicola
Agaricus *398*
Clitocybe 396, **398**
Tsugae
Ganoderma 118, **118**
tsugina
Fomitiporia 8, **9**
tuba
Agaricus 420
Clitocybe 420
Polyporus 54, **57**
tubaeformis
Agaricus 296
Elvela *168*
Omphalia 351
tubarius
Lentinus 289, **291**
tuberculosum
Ganoderma 118, **123**
tuberosus
Agaricus *355*
Boletus *151*
Collybia *355*, 374
Gymnopus 352, 353, **355**
Scutiger 64
tuber-regium
Lentinus 288
tubiformis
Merulius *168*
Tulipiferae
Boletus *15*
Irpex *15*
Irpiciporus *15*
tumulosus
Agaricus 420
Clitocybe 420

turbinatus
Agaricus *387*
Omphalopsis 310, **313**
Turci
Russula 204, **232**
turpis
Agaricus *183*
Lactaria 174, **183**, 200, 374
ulmarius
Agaricus *307*
Micromphale 307, **307**
Pleurotus *307*
Ulmi
Polyporus 54, *60*
umbellatus
Boletus *69*
Cladomeris *69*
Lentinus 295
Polyporus *69*
umbelliferus
Agaricus *345*
Omphalina 344, **345**
umbilicatus
Agaricus 352, *399*, 399
Lentinus 288, **289**
Omphalina 352
umbonatus
Chanterel *170*
Collybia *369*
Gymnopus 354, **369**
Marasmius 252, **273**
Merulius *170*
Polystictus *24*
Pleurotus 309
umbrina
Collybia 376
Schizophyllus *237*
umbrinella
Fomitiporella 12, **13**
Poria 12, *13*
umbrosus
Boletus *150*
unakensis
Gymnopus 353, **366**
uncialis
Russula 205, **232**
Underwoodii
Boletus *151*
Lentinus 294
Marasmius 251, **260**
Pyropolyporus 102, **106**
Polyporus 55, **61**
undigerus
Polyporus *22*
undosus
Polyporus *34*
Tyromyces 31, **34**
undulatus
Boletus 40
Fomitiporia 8, **10**
Polyporus 40
Peziza *168*
unguicularis
Microporellus 53, **53**
Polystictus *53*
ungulatus
Boletus *98*
Fomes 95, **98**
unguliformis
Lenzites *127*
unicolor
Boletus *37*, *124*, 151
Cerrena 124, **124**
Daedalea *124*
Hexagona *83*
Polyporus *37*
Spongipellis 37, **37**
Trametes *37*
uniformis
Collybia *365*
Gymnopus 353, **365**
ursinus
Agaricus *246*
Lentinus *246*
Panellus 244, **246**
uvidus
Agaricus *184*
Lactaria *184*
Vaillantii
Marasmius 286
Valenzuelianus
Polyporus *101*
Vanderbiltianus
Boletus *140*
Ceriomyces 136, **140**
varia
Lactaria 175, **190**
variabilis
Clitocybe 397, **411**
variata
Russula 203, **216**, 236
variegatus
Favolus 83, **83**
Hexagona *83*
Lenzites *127*
variicolor
Hygrophorus 391, **394**
variiformis
Polyporus *29*
variiporus
Polyporus 55, **60**
variipes
Boletus *142*
variolosus
Hygrophorus 390
vellereus
Agaricus *177*
Lactaria 173, **177**
Lentinus *293*
velutina
Collybia 376
Lentinus 289, **292**
Panus *292*
velutipes
Agaricus *361*
Collybia *361*
Favolus 52
Gymnopus 353, 354, **361**
Marasmius 253, **275**
Venezuelae
Polyporus *101*
venosus
Agaricus *273*
ventricosa
Collybia 396
ventricosipes
Russula 203, **215**
Verae-Crucis
Lentinus 246
Phaeolopsis **73**

Verae-Crucis
Polyporus 73, *73*
verecundus
Polyporus *36*
vermiculosus
Boletus *151*
vernicosus
Polyporus *62*
verrucosa
Lenzites 131
versicolor
Boletus *18*
Coriolus 16, **18**, 28
Polyporus *18*
versicutis
Polyporus *33*
Tyromyces 31, **33**
versipellis
Boletus *139*
vesca
Russula 236
vestida
Pocillaria *292*
vestita
Omphalia *345*
veternosa
Russula 203, **219**
vexans
Mycena *329*
Prunulus 320, **329**
vialis
Clitocybe 397, **413**
Heliomyces *425*
Lenzites *129*
Marasmius 253, **276**
vibratilis
Coriolopsis 75, **76**
Polyporus *76*
vietus
Agaricus 182
Lactaria 200
vilescens
Agaricus *409*
Clitocybe 397, **409**
villosus
Boletus *78*
Favolus *78*
Funalia 78, **78**
Lactaria *178*
Lentinus *291*
Merulius *168*
Polyporus *78*
vinacea
Russula 203, **217**
vinosus
Nigroporus **85**
Polyporus 85, *85*
Russula *225*
violacea
Daedalea 127
violaceifolia
Clitocybe 398, **414**
violaceofulvens
Agaricus *241*
Resupinatus 240, **241**
violaceofulvus
Panus *241*
virens
Agaricus *406*
virens
Clitocybe 397, **406**
virescens
Agaricus *209*
Russula 202, **209**
virgatulus
Hygrophorus 391, **393**
virgatus
Polyporus 54, **56**
virgineus
Agaricus *386*
Boletus *16*
Camarophyllus 385, **386**
Hygrophorus *386*
virginianus
Gymnopus 352, **357**
viridarius
Boletus *155*
viride
Chlorophyllum **172**
Neurophyllum 172, *172*
viridella
Russula 202, **210**
viridifuscus
Marasmius 251, **264**
viridigriseus
Prunulus 322, **340**
viridipes
Russula 236
viridis
Agaricus *406*
viscidus
Boletus *139*, 156
Ceriomyces 136, **139**
viscosus
Boletus *153*, 153
vitellina
Russula 236
viticola
Fuscoporia 3, **4**
Marasmius 286
Polyporus *4*, 6
Xerotus *164*
vitilis
Agaricus 343
Mycena 343
vittata
Coriolopsis 75, **76**
Hexagona *76*
volemus
Agaricus *195*
Lactaria *195*
Volkertii
Gymnopus 353, **365**
Omphalia *347*
Omphalina 344, **347**
volvatus
Polyporus 94, *94*
Cryptoporus **94**
vulgaris
Agaricus *326*
Mycena *326*
Prunulus 320, **326**
vulpinus
Agaricus *246*
Lentinus *246*
Panellus 244, **246**
washingtonensis
Clitocybe 397, **411**

washingtonensis
Marasmius 252, 254, **270**
Whetstoneae
Clitocybe 396, **398**
Whiteae
Scutiger 64, **67**
Wilsonii
Hexagona *49*
Inonotus 86, **89**
Marasmius 251, **261**
Wrightii
Chanterel 167, **170**
Lentinus *292*
Panus *245*
Polyporus 55, **61**
xalapensis
Polyporus *27*
xanthogalacta
Lactaria *187*
xanthophyllus
Agaricus *346*
xanthopilus
Agaricus 374
xerampelinus
Agaricus *208*
Russula 202, **208**
xuchilensis
Gymnopus 354, **373**
xylopodius
Lentinus 295
yucatanensis
Pyropolyporus 102, **106**
Zippelii
Agaricus 303
Pleurotus 303
zonalis
Polyporus *46*
zonaria
Lactaria 200
zonatus
Agaricus *287*
Crinipellis 287, **287**, 375
Daedalea *126*
Ganoderma 118, **120**
Polyporus 16

GENERAL INDEX

Page numbers indicating place of description are in **bold face** type, and those indicating synonymy are in *italic*, while those in ordinary type refer to keys and incidental mention.

Abortiporus **64**
distortus **64**
Agaricaceae **163**
Agaricanae *237*
Agariceae 163, **237**
Agaricon *101*
Agaricus 101
abietinus *300*
abscondens *307*
abundans *367*
acervatus *362*
acicula 342
acris 176
adirondackensis *401*
Adonis 342
adustus 206, *207*, 207
densifolius *206*
Aesculi *126*
alboflavus *346*
albo-umbilicatus *399*
alcalinus 342
alectorolophoides *169*
a'gidus 243
alliatus *281*
alneus *237*, 237
alphitophorus *339*
alutaceus *231*
roseipes *227*
amabillissimus *324*
amarus 176
amictus 342
androsaceus *282*, *284*
angustissimus 417
anisarius *406*
anomalus *300*
anthiceps *316*
apertus *400*
Agaricus
applicatus 240, *242*
archyropus *270*
aspideus *184*
atratoides *363*
atratus *364*
atroalboides *329*
atrocoeruleus *240*
aurantiacus *169*
aurantiellus *361*
auratocephalus *387*, 417
Austini *312*
azonites *194*, 194
barbatulus *240*
behringensis 317
Benzonii *310*
Bertieri *291*
betulina *127*
bifida *215*
Blakei *298*
boletiformis *130*
Boryanus *370*
brumalis *406*, 406
buccinalis *345*
bulbosus *142*
caespitosus *420*
californiensis 342
calopus *282*
calyx *293*
campanellus 310, *313*
camphoratus *198*
camptophyllus 317
candicans *399*, 399
candidissimus *298*
cantharelloides *168*
Cantharellus *388*
caprinus 390

Agaricus
carneolus *351*
carneotomentosus *289*
carnosus *358*
caryophylleus *271*
catephes *302*
catinus *402*
caulicinalis *278*, 278, *287*
caveatus *305*
cayennensis *361*
centenarius *312*, 317
ceraceus *378*
cerasinus 384
cerinus *361*
cerussatus 417
chama 296
Chantarellus 167, *169*
chioneus 303
chlorocyanus 318
chlorophanus *378*
chondripes *350*
chryseus *346*
chrysodon 390, *391*
chrysoleucus 351
chrysophyllus *346*
ciliatulus *309*
cilicioides *179*
cinnabarinus *170*
circellatus *181*
circinatus 308
cirratus 374
citricolor *316*
citrinellus 342
clavicularis *330*
clavilaris *328*
clavipes *410*
coccineus *380*, 380
cochleatus *295*
cohaerens *360*, 360
coloreus *359*
columbanus 417
commiscibilis *306*
compressipes *408*
concavus *409*
conchatus *289*
conferruminatus 342
confluens *269*, *295*
confragosus *126*
conicus *379*
conigenoides *356*
conigenus 375
connatipes *326*
connatus 306
connexus *401*
constans *327*
cornucopioides *295*, *305*
corticalis *328*
corticola *328*
cossus 395
craspedius 308
cremoraceus *359*
crenulatus 249, 310
crinitus 179, *291*
cyanipes 317
cyanoxanthus *217*
cyathiformis *406*, 406, *409*, 409
cymbaliferus *331*
cyphellaeformis 303
dealbatus *398*
Agaricus
debilis 342
decolorans *225*
delectabilis *323*
delicatellus *354*
deliciosus *186*
denticulatus 294, *332*
detersibilis *363*
dicolor *406*
difformis 417
discretus *309*, 342, 425
ditopus 417
Dorotheae 375
dryophilus *362*
eburneus *391*
ectypoides 417
ectypus 417
elatinus 303
elegans 343
elephantinus 206
elixus 417
emeticus 201, 234, 235
epichysium *347*
epiphyllus *277*
epipterygius *335*
erubescens 417
esculentoides *359*
eugrammus *245*
euspeireus *316*
excavatus *308*, 308
exsculptus *359*
facifer *421*
familia *365*
fibula *314*
fibuloides *313*
filopes 343
fimbriatus 307
flabellatus 303
flabelliformis *289*, 289
flaccidus 417
flammeus *381*
flavellus *256*, *349*
flavidellus *404*
flavolanatus *302*
flexuosus 180
fluxilis 303
foetens *214*
foliolum *165*
fragilis *233*, 233, *313*, 313
fragrans 417
fuliginosus *194*
fulvosus *387*
fumosus *409*
furcatus *215*
fuscifrons *308*
fuscolilacinus *364*
fuscopurpureus *272*
galericulatus *336*
gallinaceus 418
galopus 319
geotropus 418
Gerardianus *347*, 418
giganteus 418
gilvus *407*
glandulosus 306
glyciosmus *193*
gracillimus 351
graminum *283*
griseus *222*, 222, 318

Agaricus
gynaecogalus *199*
haedinus *301*
haematocephalus *267*
haematopus 318, *319*
helvus *191*
hemileucus *266*
hemiphlebius *305*
hemispilus *293*
heterophyllus *216*
Hilairianus *361*
hirneolus 418
hirsutus *130*
hirtus *293*
Hobsoni 303
Hoffmani 418
hygrophoroides *363*
hypothejus *394*
hysginus *181*
ichoratus *196*
illudens 420, *421*
immaculatus *312*
inconstans *289*
indigo *187*
infundibuliformis *408*
insulsus *180*
integer *228*
integrellus 351
intertextus *328*
inversus *407*
iocephalus *271*
Iris 343
jozzolus *391*
juniperinus *125*
Kermesinus *350*, 350
labyrinthiformis *125*
lachnophyllus *360*
lacteus *209*, 343, *391*
lactifluus *195*
lactifluus-dulcis *198*
lacunosus *359*
laetus *380*
languidus *276*
lapidescens 317
latifolius *327*
Leaianus *333*
leiopus 374, 375
lentinoides *360*
lepideus *296*
leptocephalus 343
leptolomus *400*
leptophyllus *325*
lilacifolius *346*
lilacinus 343, *346*, 346
liliputianus *239*
limacinus 395
limonium *358*
limpidus 303
lineatus 343
Listeri *176*, 176
lividorubescens *184*
lobulatus *245*
longipes 352, *366*
luteo-olivaceus *359*
luteopallens *325*
luteus *224*
lycoperdoides 425, *425*
lycoperdonoides *166*
maculatus *358*, 358
Agaricus
maculosus *407*, 407
mastrucatus 243
maurus *363*
maximus 418
Meliigena *324*
melleus *362*
metachrous *406*
metapodius 390
metatus 343
Micheneri 306, 351
microscopicus 317
miniatus *380*
minutulus *323*, 323
miratus *327*
mitis 303
monadelphus *421*
montanus *347*
mugnaius *391*
multifidus *237*
muralis 351
murinus 375
muscigenus *165*
muscoides *170*
mutilis 306
myriadophyllus *363*
nauseosus *232*
nebularis 418
necator 179, *183*, 183
niger *242*
nigrescens *206*
nigricans *206*, 207
nigripes *277*
nigrita *373*
nitratus 390
niveus *233*, 233, *377*
oculus *367*
odorifer *324*
odorus *406*
oedematopus *195*
olearius *421*
olivarius *314*
olivascens *223*, 223
omphalomorphus 294
oniscus 351
opacus 418
oreades *271*
ostreatus *304*
paluster *331*
patuloides 417
pelianthinus *332*
pelliculosus 243
peltigerinus *405*
perforans *277*
pergamenus *176*
peronatus *271*
perpusillus 303
petaloides *300*
phyllophilus *402*
physcopodius *358*
pileolarius 418
pilosus 246
pilularius *365*
piniarius 418
pinophilus *408*
pinsitus 303
piperatus *176*, 176
pithyophilus *399*
planus 303

Agaricus
platyphyllus *367*
plinthogalus *194*
poculum *409*
polygrammus 343
pometi 306
porphyrellus 418
porrigens *300*
praeceps 374
praefoliatus *367*
praelongus *330*
prasiosmus *269*
pratensis *387*
pruinosus 419
pseudopurus 343
psittacinus *380*
pubescens *299*, 299
pudorinus *393*
pulcherrimus *326*
pulvinatus 306
puniceus *381*
purpurascens 396
purpureofuscus *333*
purus *332*
putredinis 306
pyrogalus *178*
pyxidatus *346*, 346
quercinus 125, *125*
quietus *188*
racodium 243
radiatus *237*
radicatellus *323*
radicatus *366*
radiozonarius 419
radius 343
ramealis *279*
repens *367*
resimus *179*
rheicolor *361*
Rhododendri *311*
rhyssosporus 318
rivulosus 419
roridulus *339*
roridus 317
rosellus *324*, 324
roseocandidus *323*
roseo-violascens *184*
rotula *282*
ruber *218*, 228
rubescentifolius *359*
rubromarginatus 343
rufus *192*
rugosodiscus *318*
rugosus 343
rusticanus *178*
rusticus *347*
saepiarius *130*
salignus 306
sanguineus *221*, *350*, 350
sanguinolentus *319*
sapidus *305*, 305
scabellus *287*
scabriusculus *359*
scrobiculatus *179*
scyphoides *345*
semicaptus *299*
semihaerens 374
semisupinus 303
semitectus *302*
Agaricus
septicus *299*
serifluus *199*
serotinoides *304*
serotinus *304*
setipes 351
setisedus 419
siccus *283*
sienna 420
sinopicus *407*
socialis 419
spathulatus *300*
speciosus 72, *72*
sphaerosporus 351
sphagnicola 351
spinuliferus *360*
splendens 419
Spragueii 374
squamulosum *296*, *406*
squamulus *277*
stellatus 352
stereocephalus 374
stipitarius *287*
striaepileus 352
striatulus *242*
striatus *129*
strigosus *292*
strombodes *346*
stupparius *288*
stylobates 343
stypticus *244*
subbarbatus *242*
subcantharellus *169*
subcoeruleus *323*
subdulcis *198*
subhepaticus 318, *346*
subhirtus *404*
subincarnatus *325*
subinvolutus 419
submarmoreus *403*
subpellucidus *316*
subzonalis *408*
succosus *318*
sulfureoides 309
sylvaticus *234*
synodicus *257*
Tagetes *313*
tardus 420
tenerrimus *322*
tenuipes *361*
tessellatus 309
testaceus *195*
texensis *356*
theiogala *187*
tigrinum *29*
tint nnabulum 343
tomentosus *179*, 179
torminosus *178*
torulosus *289*
trabeus *129*
tremulus 303
trichopus 374
trivialis *181*
trullisatus *407*
truncicola *398*
tuba 420
tubaeformis 296
tuberosus *355*
tumulosus 420

Agaricus
turbinatus *387*
turpis *183*
ulmarius *307*
umbelliferus *345*
umbilicatus 352, *399*, 399
ursinus *246*
uvidus *184*
vellereus *177*
velutipes *361*
venosus *273*
vietus 182
vilescens *409*
violaceofulvens *241*
virens *406*
virescens *209*
virgineus *386*
viridis *406*
vitilis 343
volemus *195*
vulgaris *326*
vulpinus *246*
xanthophyllus *346*
xanthopilus 374
xerampelinus *208*
Zippelii 303
zonatus *287*
Agaricus § Clitocybe *396*
Agaricus § Collybia *352*
Agaricus § Crepidopus *304*
Agaricus § Hiatula *309*
Agaricus § Micromphale *425*
Agaricus § Mycena *319*
Agaricus § Omphalia *310*
Agaricus § Resupinatus *240*
Albatrellus *64*
Amanita
furcata *215*
rubra *234*
Amauroderma 1, 3, **115**
avellaneum 115, **116**
Chaperi 115, **116**
coffeatum 115, **116**
flaviporum 115, **116**
nutans 115, **117**
regulicolor 115, **116**
renatum 115, **117**
subrenatum 115, **117**
Androsaceus
corrugatus *342*
glaucopus *268*
Myrciae *339*
Antrodia 2, **82**
mollis *82*, **82**
Apus *237*
Armillaria *297*
alphitophylla 390
mellea exannulata *421*
Asterophora 166, **166**
clavus **166**
lycoperdoides 166, *166*
Asterosperma
agaricoides *166*
Aurantiporellus 2, **70**
alboluteus **70**
Aurantiporus 2, **71**
Pilotae **72**
Basidopus *319*
Bjerkandera 1, **40**
Bjerkandera
adusta 40, **40**
albostygia 40, **41**
fragrans *41*
fumosa 40, **41**
puberula 40, **41**
simulans 42
subsimulans 40, **42**, 81
terebrans 40, **42**
Boletaceae **133**
Boletellus 133, **156**
Ananas **156**
Boletinellus 133, **158**
castanellus 158, **158**
merulioides 158, **158**
paluster 158, **158**
Boletinus 133, **159**
appendiculatus 159, **160**
Berkeleyi 159, **159**
borealis 161
castanellus *158*
cavipes 159, **159**, 161
decipiens *159*
glandulosus 156
grisellus 159, **159**
paluster *158*
pictus 159, **160**
porosus *158*
spectabilis 159, **160**
Boletopsis *159*
Boletus 133, **154**
abietinus *27*
acidus *155*
adustus *40*
crispus *40*
aeruginascens 156
Aesculi-flavae *126*
affinis *142*
albellus *138*
albidus *34*
alboater *135*
albus *153*
alutaceus *149*
alveolarius 63
alveolatus *152*
amabilis 154, **155**
americanus *154*
ampliporus *159*
Ananas 156, *156*
annulatus *155*
arcularius *59*
Atkinsoni *142*
aurantiacus *139*
auriflammeus *141*
auripes *142*
auriporus *140*
badiceps 150
Bakeri 150
Betula *138*
betulinus *44*
bicolor *147*
brevipes *153*
brumalis *56*
caesius *34*
caespitosus *140*
carpineus *40*
castaneus *134*
caudicinus *60*
cavipes 159, *159*

Boletus
cervinus *26*
chamaeleontinus *151*
chromapes *139*
chrysenteron *150*
cinerascens 27
cinnabarinus 71, *71*
cinnamomeus *1*
circinans *153*
citrinus *72*
Clintonianus 154, **155**
coccineus *71*, *157*
collinitus *153*
communis *149*, 150
conchatus *108*
conchifer 16, *16*
confluens *92*
confragosus *126*
conicus *140*
coniferus *157*
constrictus *133*
coriaceus *92*
crassipes *142*, *149*
crinitus *84*
cubensis 150
Curtisii *143*
cyanescens *133*
Dartmouthi *151*
decipiens *124*, *159*, 159
decorus *142*
dichrous *147*
dictyocephalus 150
distortus 64, *64*
eccentricus 150
edulis *142*
elbensis 156
elegans *62*
esculentus *142*
exasperatus *59*
eximius *141*
fasciatus *114*
felleus *134*
ferruginatus *143*
ferrugineus *134*
ferruginosus 3, *5*
fibrosus *84*
firmus *151*
fistulosus *143*
flavidus *154*
flavipes *148*, 148
flaviporus *140*
flavus *86*
flexuosipes *138*
fomentarius *113*
fraternus *150*
fraxineus *96*
frondosus 68, *69*
Frostii *152*
frustulosus *138*
fuliginosus *82*
fulvus *98*, *103*, 150
fumosipes *149*
fumosus *41*
fuscoporus *40*
gilvus *81*
glabellus *147*
gracilis *135*
granulatus *153*
graveolens 112, *112*
Boletus
griseus *138*
guadelupensis *146*
hemichrysus *141*
hirsutus *24*, 24, *86*
hirtellus *154*
hispidus *86*
hydnatinus *84*
hydnoides 84, *84*
igniarius *98*, 101, *103*
ignoratus 150
illudens *145*
imberbis *41*
incarnatus *27*
indecisus *135*
inflexus *143*
innixus *140*
isabellinus *40*, *156*
juglandinus 12
lacteus *133*
lactifluus *153*
laricinus 156
Laricis *99*
lateralis *158*
leprosus *142*
leptocephalus 151
lignatilis 151
limatulus *142*
luridus 151, *151*
luteus 154, **155**, 156
magnisporus *151*
marginatus *98*
membranaceus *23*
microporus 100
miniato-olivaceus *147*
modestus *134*
Morgani *138*
Morrisii *153*
multipunctus *148*
Murraii *160*
mutabilis 151
nebulosus 151
nigrellus *135*
nigromarginatus *24*
niveus *139*
nobilis *142*
nummularis *62*
officinalis *99*
ornatipes *146*
pallidus *147*
paluster *158*
parasiticus *141*
parvus *153*
pavonius *25*
Peckii *144*
pelleporus *40*
perennis *92*
pictus *160*
Pini 111, *111*
pinicola *98*
piperatus *143*
Pocono 151
Polyporus *56*
populinus *99*
pubescens *18*
punctipes *153*
purgans *99*
radiatus *90*
radicans *153*, 153

Boletus
radicosus 151
ramosissimus *69*
Ravenelii 156, *15*
resinosus *82*
resupinatus *101*
reticulatus *83*, 83
retipes *146*
Ribis *108*
rimosellus 151
robustus *141*, 141, 151
roseotinctus *144*
roseus *95*
Roxanae *148*
rubeolarius *151*
rubeus *147*
rubiginosus *82*
rubinellus *152*
rubropunctus *143*
rugosiceps *148*
Russellii *137*
rutilans *80*
salicinus *108*, 108
salmonicolor *155*
sanguineus *71*
Satanas *151*
scaber *139*
scabripes *148*
sector *19*
semiovatus *98*
sensibilis *147*
separans *142*
serotinus *155*
Sistotrema *143*
sistotremoides *90*
sordidus *149*
spathulatus *93*
speciosus *144*
sphaerosporus 154, **155**
Spongiosus *86*
Spraguei *151*, 151, *160*
squamosus *60*
squamulosus *147*, 147
squarrosus *157*
strobilaceus *157*
strobiliformis *157*
stygius *157*
suaveolens *43*
subaureus *154*
suberosus *40*, *44*, 80, *80*
subglabripes *148*
subluteus *155*
subpunctipes *134*
subsanguineus *145*
subtomentos s *92*, *149*
subvelutipes *151*
Sullivantii *151*
sulphureus *72*
superficialis 6
supinus 100, *101*
tabacinus *144*
tenuiculus 151
tenuis *83*
tomentipes *149*
tridentinus 156
tuberosus *151*
Tulipiferae *15*
umbellatus *69*
umbrosus *150*
Boletus
Underwoodii *151*
undulatus 40
ungulatus *98*
unicolor *37*, *124*, 151
Vanderbiltianus *140*
variipes *142*
vermiculosus *151*
versicolor *18*
versipellis *139*
villosus *78*
virgineus *16*
viridarius *155*
viscidus *139*, 156
viscosus *153*, 153
Bresadolia
Mangiferae 131
Caloporus *64*
Camarophyllus 297, **385**
albipes 385, **388**
albo-umbonatus 385, **390**
angustifolius 385, **386**
auratocephalus 385, **387**, 390, 417
basidiosus 385, **389**
borealis 385, **385**
Burnhami 385, **389**
caespitosus 385, **387**
Cantharellus 385, **388**
caprinus 385, 390
cremicolor 385, **389**
fulvosus 385, **387**, 395, 417
nigridius 385, **389**
niveus *377*
obconicus 385, **386**
pallidus 385, **386**
Peckianus 385, **389**
pratensis *387*
recurvatus 385, **388**
sphaerosporus 385, **386**
squamulosus 385, **388**
subrufescens 385, **387**
virgineus 385, **386**
Cantarellus 167
Cantharellus 167
Ceriomyces 133, **136**
affinis 136, **142**
alabamensis 137, **146**
albellus 136, **138**
Atkinsonianus 136, **144**
auriflammeus 136, **141**
auriporus 136, **140**
Betula 136, **138**
bicolor 137, **147**
chromapes 136, **139**
communis 137, **150**, 150
conicus 136, **140**
crassus 136, **142**, 150, 151
Curtisii 136, **143**
eximius 136, **141**
ferruginatus 136, **143**
flaviporus 136, **140**
frustulosus 136, **138**
fumosipes 137, **149**
griseoroseus 136, **139**
griseus 136, **138**
guadelupensis 137, **146**, 150
hemichrysus 136, **141**
Housei 137, **145**
illudens 137, **145**

Ceriomyces
inflexus 136, **143**
jujubinus procerus *149*
Maxoni 137, **146**
mexicanus 79
miniato-olivaceus 137, **147**
pallidus 137, **147**
parasiticus 136, **141**
Peckii 137, **144**
piperatus *143*
retipes 137, **146**
Roxanae 137, **148**
Russellii 136, **137**
scaber *139*
scabripes 137, **148**
sordidus 137, **149**, 151
speciosus 137, **144**
subglabripes 137, **148**
subpallidus 137, **145**
subsanguineus 137, **145**
subtomentosus 137, **149**
tabacinus 137, **144**
tomentipes 137, **149**
Vanderbiltianus 136, **140**
viscidus 136, **139**
Cerioporus *54*
Cerrena 1, 3, **124**
stereoides 124, **124**
unicolor 124, **124**
Cerrenella 2, **73**
coriacea *74*
farinacea 73, **74**
Ravenelii 73, **73**
subcoriacea 73, **74**
tabacina *73*
Chanterel 163, 166, **167**, 294
alectorolophoides 167, **169**
alveolaris *48*
aplorutis *166*
aurantiacus *169*
behringensis 167, **167**
brevipes 171
bryophilus 166
candidus *163*
Chantarellus 167, **169**
cibarius *169*
cinereus *168*
cinnabarinus 167, **170**, 384
crispus *164*
dichotomus *170*
flabelliformis *164*
flavescens *169*
floccosus 167, **168**, 171
infundibuliformis 167, **168**
leucophaeus *168*
lignatilis 171
lutescens *168*
mexicanus 167, **171**
minor 167, **169**
Morgani 167, **170**
multiplex 171, *171*
muscigenus 165, *165*
muscoides 167, **170**
ochraceus 171
olivaceus 172, *172*
Petersii 167, **168**
princeps *168*
pruinosus 167, **167**
pulchrifolius 167, **167**
Chanterel
Ravenelii *169*
retirugus *166*
rosellus 167, **170**
sphaerosporus *168*
tubaeformis lutescens *168*
umbonatus *170*
Wrightii 167, **170**
Chantereleae **163**
Chlorophyllum 163, **172**, 298
viride **172**
Cladomeris *68*
ramosissima *69*
Schweinitzii *90*
umbellata *69*
Claudopus
byssisedoides *302*
Clitocybe 166, 297, 352, 374, **396**
adirondackensis 396, **401**, 417
albicastanea *391*
albidula 396, **400**
albiformis 397, **412**
albo-umbilicata *399*
angustissima 417
aperta 396, **400**
aquatica *421*
atrialba 398, **415**
avellaneialba 398, **414**
basidiosa *389*
biformis *308*
Broadwayi 398, **416**
brumalis *406*
brunnescens 398, **415**
caespitosa 417
candens 396, **399**
candida 417
carnosior *410*
catina 396, **402**
centralis *400*
cerussata 417
chrysocephala *387*, 417
clavipes 397, **410**
coloradensis 397, **410**
columbana 417
compressipes 397, **408**
concava 397, **409**, 420
connexa 396, **401**
cuticolor 398, **413**
dealbata 396, **398**, 418, 419
sudorifica 419
dicolor 397, **406**
difformis 417
ditopus 417
Earlei 397, **410**
eccentrica 396, **399**
ectypa 417
ectypoides 417
elephantina 397, **405**
elixa 417
erubescens 417
farinacea 396, **401**
fellea 396, **404**
flaccida 417
flavidella 397, **404**
fragrans 417
fumosa 397, **409**
fuscipes 396, **400**
gallinacea 418
geotropa 418

Clitocybe
Gerardiana *347*, 418
gigantea 418
griseifolia 398, **415**
Harperi 398, **415**
hiemalis 397, **406**
hirneola 418
Hoffmani 418
hondensis 398, **413**
illudens *421*
incrustata 398, **416**
infundibuliformis 397, **408**
inversa 397, **407**, 419
lactariiformis 397, **409**
leptoloma 396, **400**
marginata *421*
maxima 418
media 397, **410**
megalospora *366*, 418
metachroa 397, *406*
mexicana 398, **416**
microspora 397, **411**
monadelphia *421*
morbifera 418
multiceps 397, **405**
multiformis 397, **405**
murinifolia 398, **414**
nebularis 396, 418
niveicolor 398, **415**
nobilis 397, **404**
oculata 398, **414**
opaca 418
oreades 398, **414**
oregonensis 397, **412**
Overholstii 396, **403**
parasitica *421*
parvula 396, **403**
Peckii 397, **412**
peltigerina 397, **405**
phyllophila 396, **402**
phyllophiloides 396, **401**
piceina 418
pileolaria 418
piniaria 418
pinophila 397, **408**
pithyophila 396, **399**
porphyrella 418
pruinosa 419
pulcherrima 397, **404**
pusilla 397, **411**
radiozonaria 419
rancidula 419
regularis 396, **399**
revoluta *420*
rivulosa 419
Robinsoniae 396, **400**
robusta 396, **403**, 417
rugosipes 397, **413**
setiseda 419
sinopica 397, **407**, 419, 420
sinopicoides *407*
socialis 419
sphaerospora *421*
splendens 419
squamulosa *406*
stipitata 397, **412**
subbulbipes 397, **404**
subcandicans 397, **412**
subclavipes 397, **407**
Clitocybe
subconcava 397, **408**
subconnexa 396, **403**
subcyathiformis 396, **401**
subdicolor 397, **411**
subditopoda 397, **406**
subfumosipes 397, **411**
subhirta 397, **404**
subinversa 398, **413**
subinvoluta 419
submarmorea 396, **403**
subnigricans 396, **402**
subsimilis 419
subsocialis 4 9
subsquamata 397, **406**, 419
sudorifica 418, 419
sulphurea 420
tarda 420
tenebricosa 396, **402**
testaceoflava 398, **416**
trojana 398, **416**
trullisata 397, **407**
truncicola 396, **398**
tuba 420
tumulosa 420
variabilis 397, **411**
vialis 397, **413**
vilescens 397, **409**
violaceifolia 398, **414**
virens 397, **406**
washingtonensis 397, **411**
Whetstoneae 396, **398**
Collopus *319*
Collybia 247, *352*
abundans *367*
acervata *362*
alba *355*
albidula *370*
albipilata *366*
albogrisea *368*
alcalinolens *367*
aquosa adnatifolia 374, 420
asema 374, 375
atrata *364*
atratoides *363*
Boryana *370*
brunnescens 374
butyracea 374
campanella 374
cirrata 374, 375
clavus 374
clusilis 374
collina 375
confluens *269*, 375
conigena 375
conigenoides *356*
cyanocephala *354*
delicatella *354*
detersibilis *363*
discipes *364*
Dorotheae 375
dryophila *362*
esculenta 375
estensis 375
expallens *363*
exsculpta *359*
familia *365*
fimicola *368*
fuliginella *366*

Collybia
fuscolilacina *364*
fusipes 375
Hariolorum 375
hirticeps 375
hygrophoroides *362*
ignobilis *364*
irrorata *373*
lacerata *367*
lachnophylla *360*
lacunosa *359*
laxipes 375
Leaianus *333*
ligniarius *333*
loripes 375
luxurians *362*
maculata *358*
Micheliana 375
microspora *355*
murina 375
myriadophylla *363*
nigrita *373*
nigrodisca *356*
nivulosa 375
ochroleuca *359*
physcopodia *358*
pilularia *365*
platyphylla *367*
ramosa 375
rugosoceps *360*
simillima *362*
siticulosa 375
stipitaria 287
stolonifer 375
strictipes *357*
subdryophila 375
subrigua 375
subsulphurea *359*
tenacella 375
tenuipes *361*, 376
texensis *356*
tuberosa *355*, 374
umbonata *369*
umbrina 376
uniformis *365*
velutina 376
velutipes *361*
ventricosa 376
Collybidium *352*
luxurians *362*
Collybiopsis *250*
ramealis *279*
Coltricia 2, **91**
cinnamomea 91, **91**
connata 91, *92*
focicola 91, **92**, 94
Memmingeri 91, **94**
obesa 91, **93**
parvula *92*
perennis 91, **92**
spathulata 91, **93**
tomentosa 91, **93**
Coltriciella 2, **91**
dependens **91**
Coprinus
micaceus 385
Coriolellus 2, **28**
cuneatus 28, **28**
sepium 28, **28**
Coriolellus
Sequoiae 28, **29**
serialis 28, **29**
Coriolopsis 2, **74**
caperata 75, **77**
cirrifer 74, **76**
crocata 74, **75**
fulvocinerea 74, **76**
nigrocinerea 75, **77**
occidentalis 74, **75**
rigida 74, **75**
subglabrescens 1, 75, **77**
Taylori 74, **76**
vibratilis 75, **76**
vittata 75, **76**
Coriolus 1, 2, **16**
abietinus 18, **27**, 28
alabamensis 17, **19**
albo-cervinus *21*
arenicolor *25*
armenicolor 17, **21**
balsameus 17, **21**
biformis 18, **26**, 27, 28
brachypus 17, **21**
concentricus 17, **23**
cyphelloides 18, **26**
decipiens 27
delectans 17, **20**
depauperatus 17, **20**
Drummondii 17, **23**
ectypus 17, **18**
floridanus *19*
fulvo-umbrinus 17, **24**
haedinus 17, **22**
hexagoniformis 17, **20**
hirsutulus 16, **18**, 28
hondurensis 17, **22**
leiodermus 17, **23**
limitatus 17, **20**
Lloydii 17, **23**
maximus 18, **26**
membranaceus 17, **23**, 27
nigromarginatus 17, **24**, 28
ochrotinctellus 17, **22**
pallidofulvellus 17, **20**
pavonius 17, **25**
pinsitus 17, **24**
planellus 17, **21**
prolificans 18, **27**, 28
pubescens 17, **18**, 28
scutatus 17, **25**
sector 17, **19**, 28, 100
sericeohirsutus 17, **25**, 27
sobrius 18, **26**
subchartaceus 17, **24**
subectypus 17, **22**
sublilacinus 17, **25**
subluteus 17, **19**
substipitatus 17, **22**
versicolor 16, **18**, 28
Corniola *165*, 165
Cortinellus 297, 309
decorus 420
Crepidopus 297, **304**
caveatus 304, **305**
commiscibilis 304, **306**, 306
connatus 304, **306**
cornucopiae 304, **305**, 306
Eugeniae 304, **305**

Crepidopus
hemiphlebius 304, **305**
minutus 304, **304**
ostreatus 304, **304**
serotinus 304, **304**
subsapidus *304*
Crepidotus
lentinoides *293*
mollis 303
Cricunopus *154*
luteus *155*
Crinipellis 237, **287,** 374
alnicola 287, **288**
asperifolia *239*
calospora *238*
echinulata 287, **288**
scabella 287, **287**
squamifolia 287, **288**
stupparia 287, **288**
sublivida 287, **287**
zonata 287, **287,** 375
Cryptoporus 3, **94**
volvatus **94**
Cubamyces *423*
cubensis *43*
Cyclomyces
Greenei 131, *131*
iodinus *85*
Cyclomycetella *16*
pavonia *25, 85*
Cycloporellus 2, **85**
iodinus **85**
Cycloporus 3, **131**
Greenei **131**
Daedalea 1, 3, **124**
Aesculi 125, **126**
albida *126*
amanitoides 125, **127**
ambigua *126*
applanata *127*
Berkeleyi *130*
betulina 127, *127*
velutina *127*
braziliensis *49*
Burserae *74, 130*
confragosa 125, **126**
corrugata *126*
deplanata 127
discolor *126*
elegans *127*
epigaea *90*
glaberrima *126*
jamaicensis *130*
juniperina 125, **125**
levis *127*
merulioides *158*
mollis *82*
Palisoti *127*
pallidofulva *126*
Pini *111*
plumbea *125*
puberula *41*
quercina 125, **125**
sinuigricans *125*
Patouillardii *73*
repanda *127*
rhabarbarina *130*
rubescens *126*
saepiaria *130*
Daedalea
sanguinea *45*
Sprucei 125, **125**
stereoides *124*
striata *129*
subtomentosa *126*
tortuosa *124*
trabea *129*
unicolor *124*
violacea 127
zonata *126*
Daedaleae 1, **2**
Daedaleopsis *124*
Delicatula 351
microscopica 317
Dendrophagus 30, *30*
colossus *30*
Dendrosarcus
cornucopiae *305*
Dictyolus 163, **165**
muscigenus 165, **165,** 303
retirugus 165, **166,** 166
Dictyopus *134*
felleus *134*
Earliella 2, **44**
corrugata 1, 45, **45**
cubensis 44, *45*
Eccilia 318
Elfvingia 3, **113**
fasciata 113, **114**
fomentaria 113, **113**
Lionnetii 113, **115**
lobata 1, 113, **114**
megaloma 113, **114**
reniformis *114*
tornata 113, **115**
Elvela
cantharelloides *168*
clavus *166*
dimidiata *165*
hydrolips *168*
retiruga *166*
tubaeformis *168*
Enslinia 47, *47*
Entoloma 318
Eomycenella *250*
echinocephala *280*
Eriocorys *157*
strobilaceus *157*
Euryporus *159*
Favolus 2, **83**
alveolaris *48*
Boucheanus *48*
brunneolus *52*
canadensis *48*
caperatus *50*
cucullatus *52*
curtipes *52*
Curtisii *59*
europaeus *48*
Friesii *49*
guadalupensis *49*
hirtus 83
hispidulus *49*
induratus *52*
leprosus 83, **83**
ohiensis *48*
princeps *48*
purpurascens *50*

Favolus
striatulus *48*
tenuis 83, **83**
variegatus 83, **83**
velutipes 52
villosus *78*
Flaviporellus 2, **72**
Splitgerberi **72**
Flaviporus 2, **84**
crocitinctus 84, **84**
rufoflavus 84, **84**
Fomes 3, **94**
Abietis *111*
albogriseus *99*
alboluteus *70*
annosus 95, **97**
applanatus 113
Auberianus 95, **100,** 100
australis *115*
bomfimensis *53*
carneus *95*
connatus *99*
contrarius *46*
cornu-bovis *112*
Ellisianus 95, **98**
fomentarius *113*
fraxineus 95, **96**
fraxinophilus 95, **98**
fulvus *103*
geotropus 95, **100,** 100
graveolens *112*
hornodermus *97*
igniarius *103*
incrustatus *123*
Laricis 95, **99**
ligneus 95, **97**
lucidus 118
marginatus *98*
megaloma *114*
melanoporoides *112*
Meliae 95, **100**
neglectus *124*
nitens *123*
ohiensis 95, **96**
perpusillus 29
pinicola *98*
ponderosus *98*
populinus 95, **99**
regulicolor 115, *116*
roseus 95, **95**
rubritinctus 95, **99**
Sagraeanus 95, **96**
scutellatus 95, **96**
stipitatus *122*
subferreus 95, **97**
subfomentarius *114*
sulcatus *97*
tropicalis *8*
ungulatus 95, **98**
Fomiteae 1, **2**
Fomitella 3, **100**
fumoso-avellanea 101, **101**
supina 1, 101, **101**
Fomitiporella 1, **12**
altocedronensis 12, **12**
betulina 12, **12**
Demetrionis 12, **12**
floridana 12, **14**
inermis 12, **13**
Fomitiporella
Johnsoniana 12, **13**
Langloisiana 12, **13**
melleopora 12, **13**
umbrinella 12, **13**
Fomitiporia 1, **7**
cinchonensis 8, **10**
cubensis 8, **8**
dryophila 8, **8**
Earleae 8, **9**
flavomarginata 8, **11**
jamaicensis 8, **11**
laminata 8, **11**
Langloisii 7, 8, **9**
Lloydii 8, **10**
Maxoni 8, **11**
obliquiformis 8, **9**
ohiensis 8, **11**
pereffusa 8, **10**
prunicola 8, **9**
tropicalis 8, **8**
tsugina 8, **9**
undulata 8, **10**
Fomitopsis *94*
annosa *97*
pinicola *98*
rosea *95*
Funalia 2, **78**
aculeifer 78, **79**
cladotricha 78, **78**
hispidula 78, **78**
mons-veneris 78
stuppea 78, **79**
trichomalla *79*
villosa 78, **78**
Fuscoporella 1, **6**
coruscans 6, **7**
costaricensis 6, **7**
ludoviciana 6, **6**
mexicana 6, **7**
palmicola 6, **6**
Shaferi 6, **7**
Fuscoporia 1, **3**
carbonaria 3, **4**
ferruginosa 4, **5**
fulvida 4, **5**
juniperina 4, **4**
marginella 4, **5**
nicaraguensis 4, **6**
rufitincta 4, **5**
subiculosa 4, **4**
viticola 3, **4**
Galactopus 297, **318**
haematopus 318, **319**
rugosodiscus 318, **318**
sanguinolentus 318, **319**
succosus 318, **318**
Galorrheus *172*
Ganoderma 1, 3, **118**
argillaceum 118, **122**
australe *115*
Chaperi *116*
Curtisii 118, **120**
intermedium 118
guadelupense 118
Lionnetii *115*
mexicanum *110*
nevadense 118, **119**
nitidum 118, **123**

Ganoderma
nutans *117*
oregonense 118, **119**
parvulum 118, **123**
perzonatum 118, **121**
polychromum 118, **119**
praelongum 118, **121**
pulverulentum 118, **121**
Sequoiae 118, **119**
sessile 118, **120**
stipitatum 118, **122**
subfornicatum 118, **121**
subincrustatum 118, **122**
sulcatum 118, **120**
Tsugae 118, **118**
tuberculosum 118, **123**
zonatum 118, **120**
Geopetalum 297, **298**
abietinum 298, **300**
albescens 298, **299**
album *245*
alliaceum 298, **300**
angustatum 298, **300**
betulinum 298, **301**
Blakei 298, **298**
candidissimum 298, **298,** 303
catephes 298, **302**
copulatum 298, **302**
densifolium 298, **301**
Eugeniae *305*
flavolanatum 298, **302**
geogenius *300*
geophilum 298, **299**
haedinum 298, **301**
inconspicuum 298, **301**
oregonense 298, **299**
petaloides 298, **300,** 303
porrigens *300*
semicaptum 298, **299**
semitectum 298, **302**
septicum 298, **299,** 303
subelatinum 298, **301**
subhaedinum 298, **302**
subsepticum *299*
tremelliforme 298, **302**
Globifomes 3, **112**
graveolens **112**
Gloeocybe *172*
Gloeophyllum 1, 3, **128**
abietinellum 129, **129**
Berkeleyi 129, **130**
hirsutum 129, **130**
pallidofulvum *129*
striatum 129, **129,** 130
trabeum 129, **129**
Godfrinia *376*
Grifola **68**
Berkeleyi 68, **69**
fractipes 68, **69**
frondosa 68, **69**
poripes 68, **68**
ramosissima 68, **69**
Sumstinei 68, **68**
Gymnopus 297, **352**
acervatus 353, **362**
agricola 353, **360**
albidulus 354, **370**
albipilatus 353, **366,** 375
albogriseus 353, **368**
Gymnopus
albus 352, **355**
alcalinolens 353, **367**
atratoides 353, **363**
atratus 353, **364**
avellaneidiscus 354, **369**
avellaneigriseus 354, **369**
badiialbus 354, **369**
Boryanus 354, **370**
carnosus 352, **358**
chrysopeplus 353, **359,** 376
cinchonensis 354, **372**
conigenoides 352, **356**
cremeimelleus 354, **368**
cremoraceus 353, **359**
cyanocephalus 354, **372**
delicatellus 352, **354**
densifolius 354, **371**
dentatus 353, **366**
denticulatus 354, **368**
detersibilis 353, **363**
discipes 353, **364**
domesticus 354, **371**
dryophilus 353, 354, **362,** 374, 375
Earleae 353, **364**
Eatonae 352, **356**
expallens 353, **363**
exsculptus 353, 354, **359**
familia 353, **365**
farinaceus 352, **357**
fimetarius 354, **372**
flavescens 352, **357**
fuliginellus 353, **366,** 375
fulvidiscus 354, **368**
fulvipes 354, **369**
fuscolilacinus 353, **364**
Glatfelteri 352, **358**
griseifolius 354, **370**
hygrophoroides 353, **362**
ignobilis 353, **364**
jamaicensis 354, **373**
lachnophyllus 353, **360**
lentinoides 353, **360**
longipes *366*
ludovicianus 352, **355**
luxurians 353, **362**
marasmiiformis 354, **371**
maurus 353, 354, **363**
microspermus 353, **361**
microsporus 352, **355**
monticola 354, **371**
musicola 354, **370**
myriadophyllus 353, **363**
nigrita 354, **373**
nigritiformis 354, **371**
nigrodiscus 352, **356**
oculatus 354, **371**
oculus 353, **367**
orizabensis 354, **370**
pallidus 352, **355**
physcopodius 352, **358**
pilularius 353, **356**
platyphyllus 353, **367**
radicatus 353, **366,** 418
roseilividus 354, **373**
rugosoceps 353, **360**
setulosus 354, **373**
sinuatus 352, **357**
squamiger 352, **356**

Gymnopus
strictipes 352, **357,** 375
subavellaneus 354, **372**
subflavescens.354, **373**
subflavifolius 353, **359**
sublatericius 354, **369**
subnivulosus 354, **372**
subrugosus 354, **368**
subsulphureus 352, **359**
tenuifolius 352, **358**
tenuipes 353, 354, **361**
texensis 352, **356**
tortipes 353, **361**
trullisatus 353, **367**
tuberosus 352, 353, **355**
umbonatus 354, **369**
unakensis 353, **366**
uniformis 353, **365**
velutipes 353, 354, **361**
virginianus 352, **357**
Volkertii 353, **365**
xuchilensis 354, **373**
Gyroporus 133, **133**
castaneus 133, **134**
cyanescens 133, **133**
scaber *139*
subalbellus 133, **134**
Hansenia *16*, 16
Hapalopilus 2, **80**
fulvitinctus *36*
gilvus 1, 80, **81,** 81
hispidulus *78*
licnoides 1, 80, **81**
nidulans 80, *80*
rutilans 80, **80**
sublilacinus 80, **80**
Heliomyces 237, **247,** 310
angustifolius 247, **249**
Berteroi *267*
decolorans 247, **249**
foetens 247, **249**
hondurensis 247, **248**
multifolius 247, **249**
nigripes *277*
Peckii 247, **248**
Plumierii 284
rubritinctus 247, **249**
striatus 247, **248**
subavellaneus 247, **248**
subspodoides 247, **248**
terrestris 247, **247**
translucens 247, **247**
vialis *425*
Helotium
melanopus *277*
Hemicybe *244*
Heterobasidion *94*
annosum *97*
Heterobasidium 94
Hexagona 1, 2, **47**
alveolaris 47, **48**
brunneola 48, **52**
caperata 48, **51**
carbonaria *4*
cervino-plumbea *83*
cingulata *83*
cucullata 48, **52**
daedalea 47, **49**
favoloides *83*
Hexagona
floridana 47, **49**
fragilis 48, **50**
Friesiana *24*
hondurensis 48, **51**
indurata 48, **52**
leprosa *83*
Maxoni 47, **49**
micropora *48*
Mori 47, *48*
orbiculata *83*
papyracea *83*
polygramma *83*
portoricensis 48, **51**
princeps 47, **48**
pseudoprinceps 47, **49**
purpurascens 48, **51**
reniformis 48, **50**
sericea *25*
similis *83*
striatula 47, **48**
subcaperata 48, **50**
subpurpurascens 48, **51**
subtenuis *83*
Taxodii *52*
tenuis *83*
tessellatula 48, **50**
Thwaitesii *83*
unicolor *83*
variegata *83*
vittata *76*
Wilsonii *49*
Hiatula *309*, 425
Benzonii 425
caespitosa 310, *316*
ciliatula 425
crenulata 310
discreta 425
fragillissima 310
minima *309*, 425
purpurascens *310*, 425
Hydnoporia 1, **3**
fuscescens **3**
Hydnum
trachyodon *74*
Hydrocybe 297, **376**
albo-umbonata *390*
aurantia 377, **383**
bella 377, **384**
caespitosa *387*
californica 377, **382**
Cantharellus *388*
ceracea 376, **378**
chlorophana 376, **378**
coccinea *381*
conica 376, **379**
constans 377, **382**
cremicolor *389*
cuspidata 376, **379**
Davisii 376, **382**
Earlei 377, **384**
flammea 376, 377, **381**
flavolutea 377, **383**
hondurensis 377, **383**
immutabilis 376, **382**
laeta 376, 377, **380,** 384
laricina 376, **380**
lurida 376, **381**
marginata 376, **378**

Hydrocybe
miniata 376, 377, **380,** 381
minutula 376, **380**
nitida 376, **378**
nivea 376, **377**
parvula 376, **378**
Peckii 376, **379**
pratensis *387*
psittacina 376, **380**
punicea 376, **381**
pura 376, **377**
pusilla 376, **377**
rosea 377, **382**
ruber 376, **379**
sciophana 376
subcaespitosa 377, **384**
subflavida 377, **383**
subminiata 377, **383**
trojana 377, **383**
Hygrocybe *376*
Hygrophorus 297, 351, **390**
albipes *388*
albo-umbonatus *390*
amygdalinus *394*
arenicola *394*
aurantiaco-luteus 384
aurantius *383*
basidiosus *389*
bellus *384*
borealis *385*
Burnhami *389*
caerulescens 395
caespitosus *387*
Cantharellus *388*
capreolarius 395
caprinus 390
ceraceus *378*
cerasinus 384
chlorophanus *378*
chrysodon *391*
cinnabarinus *170*
coccineus *380*
coloratus *393*
congelatus *381*
conicus *379*
constans *382*
cossus 395
cremicolor *389*
cuspidata *379*
Davisii *382*
Earlei *384*
eburneus *391*
elegantulus *394*
erubescens 395
capreolarius 395
flavodiscus 391, **392**
flavoluteus *383*
fragrans 391, **394**
fuligineus *394*
fuscoalbus 395
glutinosus 391, **392**
haematocephalus 384
hondurensis *383*
hypothejus 390, 391, **394,** 396
immutabilis *382*
jozzolus 390, 391, **391**
lactus 395
laetus *380*
laricinus *380* , 295
Hygrophorus
Laurae **391**, 392
limacinus 395
livido-albus 395
luridus *381*
marginatus *378*
mephiticus *387*
metapodius 390
miniatus *381*
minutulus *380*
montanus 391, **395**
Morrisii *394*
mucilaginosus 384
mugnaius 391, **391**
nigridius *389*
nitidus *378*
nitratus 390
niveus *377*
obconicus *386*
ohiensis 385
pallidus *386*
paludosus 391, **393**
parvulus *378*
Peckianus *389*
Peckii *379*
penarius 395
pratensis *387*
psittacinus *380*
pudorinus 391, **393,** 396
puniceus *381*
purpurascens 396
purus *377*
pusillus *377*
Queletii 396
Ravenelii 390
recurvatus *388*
roseibrunneus 391, **394**
roseus *382*
ruber *379*
rubropunctus *392*
serotinus 391, **392**
sordidus 390, **391**
speciosus 391, **393**
sphaerosporus *386*
squamulosus *388*
stenophyllus 385
subcaespitosus *384*
subflavidus *383*
subminiatus *383*
subpratensis 391, **395**
subpustulatus *394*
subrufescens *387*
subviolaceus 391, **393**
tephroleucus 396
trojanus *383*
variicolor 391, **394**
variolosus 390
virgatulus 391, **393**
virgineus *386*
Hygrophorus § Camarophyllus *385*
Hygrophorus § Hydrocybe *376*
Hygrophorus § Limacium *390*
Hyponevris
alneus *237*
Hypophyllum
album *207*
integrum *209*
lateritium *187*
torminosum 192

Inodermus 86, *86*
hispidus *86*
Inonotus 2, **86**
amplectens 86, **89**
corrosus 86, **89**
cuticularis 86
dryadeus 86, **86**
dryophilus 86, **87**
fibrillosus *70*
fruticum 86, **89**
fulvomelleus 86, **87**
hirsutus 86, **86**
hispidus *86*
jamaicensis 86, **88**
juniperinus 86, **88**
nidulans *80*
perplexus 86, **88**
pertenuis 86, **87**
pusillus 86, **87**
radiatus 86, **90**
texanus 86, **88**
Wilsonii 86, **89**
Insiticia *319*
Irpex
cinnamomeus *3*
coriaceus *74*
crassus *15*
cubensis *15*
epiphyllus 28
farinaceus *74*
griseofuscus *74*
maximus *26*
mollis 15, *15*
pallescens *15*
pityreus *16*
sinuosus *15*
tabacinus 73, *73*
Tulipiferae *15*
Irpiciporus 1, **15**
cubensis 15, **15**
lacteus 15, **15**
mollis 15, **15**
Tulipiferae *15*
Ischnoderma *2*, **82**
fuliginosum **82**
resinosum 82, *82*
Ixocomus 136
granulatus *153*
luteus *155*
piperatus *143*
Krombholzia 136, *136*
scaber *139*
Laccaria 297, 419
Lactaria 166, 172, **172**
acris 200
aeruginea 200
affinis 174, **180,** 200
agglutinata 174, **182**
albida 200
alpina 175, **191**
aquiflua *191*
brevissima *191*
aspidea 174, **184**
aspideoides 174, **184**
atroviridis 174, **178**
Bensleyae 175, **193**
brevipes *187*
brevis *187*
calceolus 200
Lactaria
camphorata 175, **198**
fragilis **198**
Chelidonium 174, **186**
chrysorhea 174, **188**
cilicioides 174, **179**
cinerea 175, **190**
circellata 174, **181**
colorascens 174, **188**
controversa 200
corrugis 175, **197**
crocea 174, **185**
deceptiva 173, **177**
deflexa *181*
delicata 174, **185**
deliciosa 174, **186**
distans *196*
flexuosa 200
foetida *197*
fuliginosa *194*
major *194*
fumosa *194*
Gerardii 175, **195**
glaucescens 173, **176**
glyciosma 175, **193**
grisea 175, **192**
helva 175, **191**
Hibbardae 175, **193**
hygrophoroides 175, **196,** 200
hysgina 174, **181**
ichorata 175, **196**
illachrymans 200
indigo 174, **187**
insulsa 174, **180**
involuta 174, **177**
isabellina 175, **199**
lactiflua 175, **195,** 200
lanuginosa 174, **182**
ligniota 175, **194**
livescens *184*
lividorubescens 174, **184**
luteola 175, **197**
maculata 174, **185**
minuscula 175, **189**
mitissima 200
mucida 174, **181**
mutabilis 175, **199**
nitida 174, **189**
oculata 174, **189**
pallida 200
paludinella 174, **189**
parva 175, **190**
Peckii 175, **191**
pergamena 173, **176**
piperata 173, **176**
platyphylla *180*
plinthogala 175, **194**
plumbea 200
pubescens 200
pyrogala *178*
quieta 174, 188, **188**
regalis *179*
representanea 174, **183**
resima 174, 176, **179**
rimosella 175, **198**
rufa 175, 191, **192**
rufula 175, **192**

Lactaria
salmonea 175, **195**
sanguinalis 200
scrobiculata 174, **179**
seriflua 175, **199**
sordida *183*
speciosa 174, **183**
subdulcis 175, **198**
oculata *189*
subinsulsa 200
subpurpurea 174, **187**
subseriflua *198*
subtomentosa 175, **195**
subvellerea 173, **177**
subvelutina 175, **197**
Sumstinei 175, **194**
theiogala 174, **187**
torminosa 174, **178**
trivialis 174, **181**
turpis 174, **183,** 200, 374
uvida *184*
varia 175, **190**
vellerea 173, **177**
vieta 200
villosa *178*
volema *195*
xanthogalacta *187*
zonaria 200
Lactarieae 163, **172**
Lactariella *172*
azonites *194*
ligniota *194*
Lactarius 172
Lactifluus *172*
Laetiporus 2, **72**
speciosus **72**
Leccinum 136
aurantiacum *139*
constrictum *133*
edulis *142*
lactifluum *153*
piperatum *143*
scabrum *139*
subtomentosum *149*
Lentinellus 237, **295**
cornucopioides **295**
Lentinula 237, **295**
cubensis 295
detonsa 294, **295**
reticeps 309
Lentinus 131, 237, 243, **288**
albellus 289, **291**
americanus *289*
anisatus *246*
blepharodes *292*
caelopus *292*
caespitosus 376, *420*
calvescens *293*
carneotomentosus 289, **289,** 294
castaneus *293*
castoreus 246
chaetoloma 294
chama 296
chrysopeplus *359*
ciliatus *292*
cochleatus *295*
occidentalis *297*
cornucopioides *295*
crinitus 289, **291,** 294, 295

Lentinus
cubensis 295, *295*
Curtisii 294
detonsa *295*
echinopus *292*
estriatus *293*
eugrammus *245*
fallax *292*
flaccidus 294
friabilis 303
fuligineus 294
fumigatus *291*
furfurosus 294
glabratus 294
graminicola 289, **290**
haematopus *246*
hirtiformis 289, **293**
hirtus 289, **293,** 294, 295
Lecomtei *292*
lepideus *296*
Leprieurii *291*
Leveillei *291*
levis 289, **293,** 294
magnus *296*
maximus *296*
Micheneri 294
microspermus 294, *361*
nicaraguensis *291*
nigripes *291*
obconicus 294
omphalodes *289*, 294
orizabensis 289, **290**
pallidus 308
paraguayensis *293*
parvulus 294
patulus *293*
pholiotoides *291*
piceinus *289*
pilosus 246
proboscideus 246
proximus *295*
pulcherrimus 294
pyramidatus 289, **291**
Ravenelii *296*
rigidulus *292*
Robinsonii 294
Schomburgkii *291*
scyphoides 289, **290**
setiger *292*
siparius *292*
sparsibarbis *292*
spretus *296*
striatulus *293*
strigellus 289, **292**
strigosus 289, **292**
stupens *291*
suavissimus 288, **289**
subcervinus *292*
submembranaceus *293*
subscyphoides 289, **290**
substrigosus *292*
suffrutescens *296*
sulcatus 289, **291**
Sullivantii 294
Swartzii *291*
Tanghiniae *293*
tener *291*
tigrinum *296*
tubarius 289, **291**

Lentinus
tuber-regium 288
umbellatus 295
umbilicatus 288, **289**
Underwoodii 294
ursinus *246*
vellereus *293*
velutinus 289, **292**
Verae-Crucis 246
villosus *291*
vulpinus *246*
Wrightii *292*
xylopodius 295
Lentodiellum 237, **297**
concavum **297**
Lentodium 237, **296**
squamosum 294, 296, **296**
squamulosum 296, *296*
tigrinum 296, **296**, 308
Lenzites 3, **127**, 131
applanata *127*
Berkeleyi *127*
betulina 127, **127**
betuliniformis 127, **128**
bicolor *126*
Cookeii *126*
Crataegi *126*
cubensis 127, **128**, 128
deplanata *127*
distantifolia *125*
Earlei 127, **128**
endophaea *130*
flaccida *127*
glaberrima *126*
Klotzschii *126*
mexicana 130
Palisoti *127*
platypoda *127*
protracta *129*
proxima *126*
repanda *127*
rhabarbarina *130*
saepiaria 128, *130*
striata *129*
tenuis 128
trabea *129*
unguliformis *127*
variegata *127*
verrucosa 131
vialis *129*
Lenzitina *128*
Lepiota 298
cretacea 310
Lepiotanae 237, **297**
Lepista
personata 419
Leptoglossa 165, *165*
Leptomyces 297, **309**, 425
Benzonii 309, **310**
ciliatulus 309, **309**
discretus 309, **309**
lignifragus 309
minimus 309, **309**
purpurascens 309, **310**
Leptoporus 30, *30*
duracinus *37*
mexicanus 37
nauseosus 37
pubescens *19*
Leucoporus *54*
Leucoprinus *309*
Limacella 298
Limacium *390*
Linopodium *319*
Lyophyllum *352*
Marasmiellus 237, **243**
inconspicuus 243, **243**
juniperinus 243, **243**
purpureus 243, **244**
Marasmius 237, **250**, 374, 376
acerinus *273*
aciculaeformis 251, **259**
aculeatus 376
albiceps 254, **283**
albofuscus 251, **263**
albomarginatus 284
alienus 253, **279**
alliaceus 284
alliatus 254, **281**
amabilipes *361*
amadelphus 284
androsaceus 250, 254, **284**
anomalus *270*, 270
arachnoideus *238*
archyropus 252, **270**
arecarius tenellus 285
atropurpureus 251, **262**
atroviridis 251, **261**
badiceps 254, **279**
badius 252, **267**, *279*, 279
bahamensis 251, **265**
bellipes 254, **282**
bermudensis 250, **255**
Berteroi 251, **267**, 284
biformis 253, **274**
bombycirhiza 285
brevipes 285
caespitosus *272*
calopus 254, **282**
campanulatus *283*
candidus 285
capillaris 254, **283**
capillipes *281*
caricicola 253, **277**
caryophylleus 252, **271**
castaneicolor 253, **274**
catervatus *257*
caulicinalis *278*
cerussatus *257*
cervinicolor 251, **265**
chrysochaetes 250, **255**
cinereialbus 251, **264**
clavaeformis 285
Clementsianus *283*
clitocybiformis 251, **263**
colimensis 251, **261**
concinnus 254, **281**
concolor *239*
confluens 252, **269**, 375
contrarius 253, **274**
Copelandi 252, **273**
coracicolor 251, **265**
coracipes 252, **268**
Crescentiae 250, **259**
cubensis 251, **263**
cucullatus 254, **280**
curcurbitula 285

Marasmius
Curreyi 285
curtipes 252, **268**
cyathiformis 252, **268**
dealbatus *257*
decurrens *276*
delectans 254, **281**
dichrous 252, 253, **272**, 286
Earlei 250, **258**
elongatipes 253, 254, **274**
epiphyllus *277*
fagineus *272*
fasciatus 252, 254, **270**
felix 254, **279**
fibrosipes 251, **266**
filopes 254, **280**
flavellus 250, **256**
floriceps *267*
foetidus 252, **273**, 286
fulviceps *283*
fuscopurpureus 252, **272**
glabellus 254, **282**
glaucopus 252, **268**
glebigenus 250, **258**
graminis 250, **259**
graminum 254, **283**, 285
gregarius *279*
guyanensis 250, **256**
haematocephalus 252, **267**, 285
haematodes *239*
Harrisii 251, **264**
hemileucus 251, **266**
hinnuleiformis 251, **263**
hinnuleus 251, **259**
Hiorami 250, **256**
hirtipes *274*
hondurensis 250, **258**
hyperellus *262*
hypophaeus *267*
impudicus 285
inaequalis 250, **256**
insititius 253, 254, **278**
iocephalus 252, **271**
ionides 252, **268**
jalapensis 251, **264**
jamaicensis 251, **261**
Johnstonii 252, **269**
Juglandis 285
languidus 253, **276**
leptopus 254, **279**
leucocephalus 285
longipes *274*, 274
longistriatus *274*
macrorrhizus 285
magnisporus 253, **275**
Marbleae 250, **255**
melanopus 254, **284**
minutissimus 254, **280**
minutus 254, **280**
montanus 251, **266**
Morganianus 285
multiceps 286, *286*
multifolius 252, **270**
musicola 251, **260**
nanus 250, **256**
nidulus *239*
nigripes 253, **277**
niveicolor 250, **257**
nuptialis 285

Marasmius
obsoletus 251, **265**
Olneii 252, 254, **280**
opacus 253, **278**
oreades *271*
pallescens 251, **261**
papillatus 253, **276**
papillosus 285
paucifolius 251, **262**
Peckii 250, **254**
perforans 253, **277**
peronatus 252, **271**
subnudus *271*
personatus 251, **259**
petiolorum 250, **255**
phaeus *267*
phyllophilus 252, 253, **278**
picipes 251, **260**
plancus 285
plicatulus 254, **282**
polyphyllus 252, **269**
polyporoides 251, **266**
portoricensis 251, **262**
praeacutus 253, 254, **277**
praedecurrens 250, **257**
praetortipes 250, **258**
prasiosmus 252, **269**
proletarius 250, **256**
pruinatus 285
pruinosifolius 251, **265**
pruinosulus 250, **258**
pruinosus 285
pulcherripes 254, **284**
purpurascens 252, **267**
pusio 285
putredinis 251, **265**
pyrinus 254, **281**
pyrrhocephalus 285
ramealis 254, **279**
ramulinus 253, **278**
resinosus 253, **276**
candidissimus *276*
niveus *276*
rhabarbarinus *267*, *361*
rhodocephalus *267*
rigidus 286
rotula 254, **282**
rubrophyllus 252, 253, **271**
rugulosus 251, **260**
saccharinus 286
salignus 253, **276**
major *275*
sanguineus *267*
sarmentosus *286*
scorodonius *281*
semihirtipes 253, **274**
semisquarrosus *272*
semiustus *262*
sericipes 252, **268**
setulosipes 250, **257**
siccus 254, **283**
soliformis 251, **261**
spodoleucus 238
spongiosus 252, 253, **272**
squamula 253, **277**, 286
stenophyllus 251, **262**
straminipes 254, **283**
stylobates 250, **257**
subcoracinus *260*

Marasmius
subcyathiformis 252, **269**
subglobosus 250, **256**
subnudus 252, 253, **271**, 285
subpilosus 253, **275**
subplexifolius 251, **263**
subpruinosus 251, **266**
subrotula 250, **259**
subtenerrimus 250, **255**
subtomentosus 253, **275**
subvenosus *277*
sulcatipes 251, **259**
Sullivantii 286
sulphureus 286
Sutliffae 252, **273**
synodicus 250, **257**
tageticolor 252, **267**
tenebrarum 251, **260**
tener 286
tenerrimus *262*
theobromicola 250, **255**
thujinus 254, **281**
tomentellus *286*
tomentosipes 253, **278**
tortipes 215, **264**
trojanus 251, **263**
trullisatipes 252, **237**
umbonatus 252, **273**
Underwoodii 251, **260**
Vaillantii 286
velutipes 253, **275**
vialis 253, **276**
viridifuscus 251, **264**
viticola 286
washingtonensis 252, 254, **270**
Wilsonii 251, **261**
Marasmius § Pleurotopsis *238*
Melanoleuca 297, 374
albissima 417, 418, 419
melaleuca 374
Melanoporella 1, **14**
carbonacea **14**
Melanoporia 1, **14**
nigra **15**
Melanopus *54*
marasmioides *61*
scabellus *63*
Meripilus *68*
Merisma *40*, 40
Merulius *167*
alveolaris *48*
cantharelloides *169*
Cantharellus *169*
cinereus *168*
leucophaeus *168*
daedaleus *49*
fagineus *164*
foetidus *273*
infundibuliformis *168*
nigripes *169*
niveus *163*
reticulatus *166*
retirugus *166*
serotinus *165*
serpens *163*, 163
tubiformis *168*
umbonatus *170*
villosus *168*
Micromphale 297, 307
Micromphale
abscondens 307, **307**, 308
badium 307, **308**
brunnescens 307, **308**
elongatipes 307, **307**
fulvifibrillosum 307, **307**
fuscifrons 307, **308**
subexcavatum 307, **308**
ulmarius 307, **307**
Microporellus 2, **52**
dealbatus 53, **53**
holotephrus 53, **53**
porphyritis 53, **53**
unguicularis 53, **53**
Mison *101*
Monadelphus 297, 420, **420**
caespitosus 420, **420**
illudens 417, 420, **421**
marginatus 420, **421**
revolutus 420, **420**
sphaerosporus 420, **421**
Mucronoporus *91*
Everhartii *103*
fulvidus *5*
sublilacinus *80*
tomentosus *93*
Mycena 284, 285, *319*, 374
acicula 342
acutoconica *330*
Adonis 343
albogrisea *327*
alcalina 342
alphitophora *339*
amabillissima *324*
amicta 342
atroalboides *329*
atroumbonatus *335*
caesia *327*
californiensis 342
capillaripes *328*
capillaris 342
citricolor *316*
citrinella 342
clavicularis *330*
conferruminata 342
connatipes *326*
constans *327*
corticola 285, *328*
crystallina *322*
cyaneobasis *323*
cyanothrix *323*
cymbalifera *331*
debilis 342
delectabilis *323*
denticulata *332*, *334*
discreta 342
elegans 343
elegantula *337*
epipterygia *335*
filopes 343
flavifolia *324*
galericulata *336*
galopus 319
haematopus *319*
hemisphaerica *329*
hiemalis 343
immaculata *312*
intertexta *328*
Iris 343

Mycena
lactea 343
latifolia *327*
leptocephala 343
leptophylla *325*
lilacina 343
lineata 343
luteopallens *325*
meliigena *324*
metata 343
minutula *323*
mirata *327*
montana *347*
odorifer *324*
palustris *331*
polygramma 343
praedecurrens *314*
praelonga *330*
pseudopura 343
pulcherrima *326*
pura *332*
purpureofusca *333*
radius 343
radicatella *323*
rorida 317
roridula *339*
rosella *324*
roseocandida *323*
rubromarginata 343
rugosa 343
rugosodisca *318*
rugosoides *334*
sanguinolenta *319*
splendidipes *330*
strobilinoides *337*
stylobates 343
subincarnata *325*
succosa *318*
tenerrima *322*
tintinnabulum 343
vexans *329*
vitilis 343
vulgaris *326*
Mycenula *319*
Mycetinis *250*
Mylitta
lapidescens 317
Myriadoporus *40*
adustus *40*
Dussii *114*
Neurophyllum
ochraceum 171
viride 172, *172*
Nigrofomes 3, **112**
melanoporus **112**
Nigroporus 2, **85**
vinosus **85**
Nyctalis *166*
asterophora *166*
Oligoporus *30*
Omphalea 396
Omphalia *310*, 374, 376
albidula *312*
alboflava *346*
aurantiaca *315*
Austini *312*
behringensis 317
californica 351
campanella *313*
camptophylla 317
carneola *351*
centenaria *312*
chlorocyana 318
chondripes *350*
chrysophylla *346*
clavata *313*
corticola *312*
curvipes *329*
epichysium *347*
eximia *345*
fibuloides *313*
flavella *349*
grisea 318
hepatica 318
integrella 317
Kermesina *350*
lilacifolia *346*
luteola *345*
maura *363*
Micheneri 351
muralis 351
oculus *367*
olivaria *314*
papillata *311*
paraguariensis *316*
pubescentipes *313*
pusillissima *311*
pyxidata *346*
Rhododendri *311*
rhyssospora 318
rugosodisca *318*
rustica *347*
sanguinea *350*
scabriuscula *359*
scyphoides *345*
semivestipes *334*
serotina *314*
sphaerospora 351
sphagnicola 351
sphagnophila *345*
strombodes *346*
subclavata *347*
subgrisea 318
Swartzii *314*
telmatida 317
tubaeformis 351
vestita *345*
Volkertii *347*
Omphalina 297, **344**
acuminata 344, **349**
buccinalis 344, **345**
chondripes 344, **350**
chrysoleuca 351
chrysophylla 344, **346**, 351, 352, 417, 418
coccinea 344, **350**
collybiiformis 344, **349**
cremea 344, **350**
cuspidatella 344, **349**
Dawsonii 344, **345**
Earlei 344, **350**
epichysium 344, **347**, 351, 418
eximia 344, **345**
flavella 344, **349**
gracillima 351
hydrogramma 344
hypobrunnea 344, **348**
incarnata 344, **351**

Omphalina
integrella 351
jalapensis 344, **349**
lenta 344, **349**
lilacifolia 344, **346**
luteicolor 344, **348**
miniata 344, **351**
niveicolor 344, **348**
onisca 351
pyxidata *346*
rustica 344, **347**
scyphoides *345*
Sequoiarum 344, **347**
setipes 351
stellata 352
striaepilea 352
strombodes 344, **346**
subcartilaginea *345*
subclavata 344, **347,** 351
subhepatica 344, **346,** 351
subscyphoides 344, **348**
tepeitensis 344, **348**
umbellifera 344, **345**
umbilicata 352
Volkertii 344, **347**
Omphalius *396*
Omphalopsis 297, **310**
albidula 310, **312**
aurantiaca 311, **315**
Austini 310, **312**
Bakeri 311, **315**
californiensis 311, **315**
campanella 310, 311, **313**
centenaria 310, **312**
citricolor 311, **316**
clavata 310, **313**
convexa 311, **316**
corticola 310, **312**
cuticolor 311, **317**
distantifolia 311, **315**
euspeirea 310, 311, **316,** 317, 375
fibula 310, 311, **314**
fibuloides 310, **313**
immaculata 310, **312**
McMurphyi 311, **315**
myceniformis 311, **316**
olivaria 310, **314**
papillata 310, **311**
petasiformis 311, **316**
praedecurrens 311, **314**
pseudogrisea 311, **314**
pusillissima 310, **311**
Rhododendri 310, **311**
roriduliformis 311, **317**
serotina 311, **314**
subavellanea 311, **317**
subimmaculata 311, **315**
translucentipes 310, **312**
turbinata 310, **313**
Onnia *91*
tomentosa *93*
Onygena
agaricina *166*
Panellus 237, *243*, **244**
cantharelloides 244, **245**
dealbatus 244, **245**
eugrammus 244, **245**
flabellatus 244, **245**
haematopus 244, **246**
Panellus
jalapensis *244*, **244**
stypticus *244*, **244**
subcantharelloides *244*, **245**
ursinus *244*, **246**
vulpinus *244*, **246**
Panus *288*, 376
alliaceus *300*, 303
angustatus *300*
applanatus *245*
betulinus *301*
concavus *297*
conchatus *290*
connatus *295*, *306*
copulatus *302*
cubensis *293*
dealbatus 245
eugrammus *245*
flabelliformis *290*
foetens 303
fulvidus *291*
guaraniticus *292*
hirtus *293*
infundibulum *293*
levis *293*
operculatus 247
Robinsonii 246
rudis *292*
salicinus *241*
strigosus *293*
stypticus *244*
subflabellatus *302*
Sullivantii 247, 376
torulosus *289*
troglodytes 295
velutinus *292*
violaceofulvus *241*
Wrightii *245*
Paxillus
porosus *158*
Pelloporus *91*
perennis *92*
tomentosus *93*
Peziza
pendula 47, *47*
undulata *168*
Phaeolopsis 2, **73**
Verae-Crucis **73**
Phaeolus 2, **90**
Schweinitzii 90
sistotremoides **90**
Phaeoporus *86*
Phelline 101
Phellinus *101*
igniarius *103*
Pholiotanae 273
Phyllodontia *124*
Magnusii *124*
Phyllotus *298*, 298
hygrophorus *245*
imbricatus *245*
Pinuzza *154*
Piptoporus 1, **44**
betulinus *44*
suberosus **44**
Placodes *118*
incanus *96*
Pleurotopsis 237, **238**
arachnoidea 238, **238**

Pleurotopsis
asperifolia 238, **239**
calospora 238, **238**
liliputiana 238, **239**
niduliformis 238, **238**
Pleurotus 297, 374, 376
abscondens *307*
applicatus *242*
approximans *241*
atrocoeruleus *240*
griseus *240*
atropellitus *243*
aureotomentosus 376
Blakei *298*
caespitosus *421*
campanulatus *241*
candidissimus *298*
catephes *302*
caveatus *305*
chioneus 303
circinatus 308
commiscibilis *306*
connatus 306
cornucopiae *305*
corticatus 308
craspedius 308
cyphellaeformis 303
elongatipes *307*
excavatus *308*
flabellatus 303
flavolanatus *302*
fluxilis 303
fuscifrons *308*
geogenius *300*
glandulosus 306
griseus *240*
haedinus *301*
hemiphlebius *305*
Hobsoni 303
inconspicuus *301*
limpidoides 303
limpidus 303
Micheneri 306
minutus *304*
mitis 303
mutilis 306
niger *242*
niphetus *300*
ostreatus *304*, 306
perpusillus 303
petaloides *300*, 300
pinsitus 303
planus 303
pometi 306
porrigens *300*
pubescens 309
pulvinatus 306
putredinis 306
salignus 306
semicaptus *299*
semisupinus 303
semitectus *302*
septicus *299*
serotinus *304*
similis *305*
stratosus *300*
striatulus *242*
subbarbatus *242*
sulfureoides 309
Pleurotus
terrestris 309
tessellatus 309
tremulus 303
ulmarius *307*
umbonatus 309
Zippelii 303
Plicatura 163, **163**
Alni 163, *163*
faginea 163, **164**
flabelliformis 163, **164**
guadelupensis 163, **164**
lateritia 163, **164**
nivea 163, **163**
Plicaturella 163, **172**
olivacea **172**
Pluteanae 237
Pocillaria *288*
cinnamomea *293*
Palmeri *292*
reflexa 295
simulans *292*
vestida 292
Pogonomyces 2, **84**
hydnoides **84**
Polymarasmius 237, **286**
multiceps 286, **286**
s rmentosus 286, **286**
submulticeps 286, **286**
Polyozellus 163, **171**
multiplex **171**
Polypilus *68*
frondosus *69*
speciosus *72*
sulphureus *72*
Polyporaceae **1**
Polyporeae **1**
Polyporellus *54*
Polyporus 2, **54,** *54*
abortivus *64*
acicula 54, **57**
admirabilis 54, **57**
adustus 40, *40*
aegerita 100
aemulans 54, **59**
Aesculi *126*
albellus *35*
albiceps 54, **58**
albo-cervinus *21*
albogilvus *36*
alboluteus 70, *70*
albostygius *41*
alveolarius 63
amygdalinus 63
anax *69*
anceps *35*
annosus *97*
arcticus 28
arculariellus 55, **59**
arculariformis 55, **59**
arcularius 55, **59**
arenicolor *25*
argentatus *71*
armenicolor *21*
atratus *63*
Auberianus *100*
aurantiacus *423*
aureomarginatus *81*
aureo-nitens *90*

Polyporus
australis *115*
Baccharidis *108*
badius 111
balsameus *21*
Bartholomaei *35*
Beatiei *69*
Berkeleyi *69*
biformis *26*
bivalvis *83*
Blanchetianus 55, **63,** 63
borealis *38*
Boucheanus peponius *48*
brachypus *21*
breviporus *81*
brunneus 131
Burtii *40*
byrsinus *75*
caeruleoporus *66*
caesius *34*
calcitratus *110*
calvescens *81*
caperatus *77*
carbonaceus 14, *14*
carneofulvus *8*
carneus *95*
carolinensis *26*
castanophilus *72*
caudicinus 55, **60,** 63
cerifluus *33*
cervicornis *53*
cervino-nitens *21*
chartaceus *26*
chioneus 30, *35*
cincinnatus *72*
cinnabarinus *71*
circinatus *93*
circumstans *98*
cirrhiferus *76*
citrinellus 131
citromallus 131
cladotrichus *78*
coffeatus *116*
colossus 30, *30*
columbiensis 54, **58**
conglobatus *112*
connatus *92*, *99*, 99
corrugatus *45*
Cowellii 55, **60**
craterellus 54, **57**
crispellus *34*
crispus *40*
crocatus *75*
croceus *72*
crocitinctus *84*
cryptopus *65*
cubensis *43*
cucullatus *90*
cupulaeformis *47*
Curtisii *120*
cyathiformis *57*
dealbatus 52, *53*
decipiens 27
decurrens *65*
delectans *38*
delicatus 54, **56**
dendriticus 131
dependens 91, *91*
detonsus *46*
Polyporus
diabolicus 55, **62**
dibaphus 54, **56**
discoideus 54, **57**
dorcas 81
Drummondii *23*
dryadeus *86*
dryophilus *87*
dualis *93*
Earlei *67*
ectypus *18*
elatus 111
elegans 55, **62**
Ellisii *64*
endocrocinus *86*
endothrix *79*
endozonus *81*
evolutus *45*
extensus *110*
fagicola 54, **55**
Feathermanni *84*
Feei *21*
fibrillosus 70, *70*
fimbriporus 40
fissilis *39*
fissus 55, **62**
flabellum *27*
flavidus *69*, 69
flavosquamosus *64*
flavovirens *68*
floridanus *19*
focicola *92*
fomentarius *113*
excavatus *113*
fractipes *69*
fragrans *41*
fraxineus *96*
fraxinophilus *98*
Friesii *19*
frondosus *69*
fruticum *89*
fulvitinctus *36*
fumosus *41*
fusco-badius *45*
galactinus *39*
geotropus *100*
gibberulosus *24*
Gillotii *97*
gilvus *81*
glomeratus *90*
gracilis *60*
griseus *67*
guadelupensis *101*
guttulatus *31*
haedinus *22*
Halesiae *40*
havannensis *44*
hemileucus *101*
hirsutulus *18*
hirsutus *24*
hispidellus *66*
hispidoides *90*
hispidus *86*
holmiensis *41*
holocyaneus *66*
holotephrus *53*
humilis 54, **58**
Humphreyi *60*
hydniceps 54, **55**

Polyporus
hydrophilus *39*
hyperboreus *103*
hypococcineus *72*
igniarius *103*
ilicincola *27*
immitis *39*
impolitus 37
inconspicuus *46*
inflatus *94*
inflexibilis *104*
iodinus *85*
irregularis *97*
juniperinus *106*
kansensis *66*
labyrinthicus *26*, 26, 37
laceratus *27*
lacteus *36*
lactifluus *69*
lanatus *75*
latissimus *125*
Leibmanni *46*
leiodermus *23*
lenis *75*
leucomallus *36*
leucophaeus *114*
leucospongia 29, *29*
licnoides *81*
ligneus *97*
Lindheimeri *40*, *79*
linteus *109*
lobatus *114*
ludens *19*
luridus *56*
maculatus *31*
maculosus 55, **61**
marasmioides 55, **61**
marginatus 95, *98*
marginellus *5*
mariannus *45*
marmoratus *114*
megaloma *114*
melanoporus 112, *112*
Meliae *100*
membranaceus *23*
Menandianus *27*
Meyenii *26*
micromegas 45, *46*
microporus 100
microstomus *45*
molliusculus *26*
Morgani *66*
multiformis *93*
mutabilis *53*
myrrhinus *75*
nephridius *63*
nicaraguensis 111
nidulans *80*
niger 14, *15*
nigricans *103*
nivosus *42*
Novae-Angliae *103*
nutans *117*
obductus *32*
oblectanus 32
obolus 54 us 32
obtusus 3321,
obvolutu 21, 3
occider anus 3

Polyporus
odorus *43*
Oerstedii *115*
officinalis *99*
omalopilus *81*
pachycheiles *34*
pachypus 63
pallescens *40*
pallidocervinus *20*, *80*
palmicola 6
palustris *31*
papyraceus 27
pargamenus *27*
parvulus *27*, *91*, 91
Peckianus *70*
pellitus *84*
perennis *92*
perplexus *88*
perpusillus 29
Perrottetii *79*
persicinus *67*
petaliformis *53*
phaeoxanthus 54, **58**
piceinus *111*
Pilotae 71, *72*
Pini *111*
Pini-canadensis *72*
pinicola *98*
pinsitus *24*
planus *21*
plebeius cubensis *101*
plumbeus *46*
polychromus *119*
polygrammus *53*, 83
Polyporus 54, **56**
poripes *68*
porphyritis *53*
prolificans *27*
pseudopargamenus *27*
pseudosenex 111
pubescens *18*
putidus 63
radiatus *90*
radicatus *66*
Ravenelii *53*
renatus *117*
reniformis *114*
resinosus *97*
retipes *65*
rhabarbarinus 111
rheicolor *72*
ribesius *108*
Richardsonii 28
roseus *95*
rudis 45
rufo-atratus *62*
rufoflavus 84, *84*
rufo-pallidus *95*
rutilans *80*
Sagraeanus *96*
salignus *41*
sanguineus *71*
sarcitus *110*
Sartwellii *27*
scabellus 55, **63**
scabriceps 54, **56**
scabrosus *45*
scalaris *29*
scarrosus *26*

Polyporus
Schulzeri *37*
Schweinitzii *90*
sclerodermeus *114*
sclerodes 111
scleromyces 111
scorteus *75*
scutellatus *96*
semipileatus *35*
semisupinus *34*
serialis *29*
sericeo-hirsutus *25*
serpentarius *97*
Shiraianus *70*
simillimus 94
simulans *42*
sobrius *26*
sordidulus 81
sordidus *33*, 81, 101
spectabilis *90*
splendens *92*
Splitgerberi 72, *72*
spongia *90*
Spraguei *33*
spurcus *81*
stereinus *46*
stipitarius *60*
suaveolens 42, *43*
subcinereus *40*
subelegans 55, **62**
subflavus *27*
subflexibilis 111
subfulvus 45
subgiganteus *69*
subiculosus *4*
subluteus *19*
subolivaceus *101*
subpileatus *97*
subsericeus *92*
substuppeus *40*
Sullivantii *19*
sulphuratus *72*
sulphureus *72*
surinamensis *46*
Swartzianus 77
tabulaeformis *90*
tener *24*
terebrans *42*
tomentoso-quercinus *37*
tomentosus *93*
tornatus *115*
trachypus *62*
Tricholoma 55, **60**
trichomallus 79, *79*
trichrous 37
triqueter *93*
tuba 54, **57**
Ulmi 54, *60*
umbellatus *69*
Underwoodii 55, **61**
undigerus *22*
undosus *34*
undulatus 40
unicolor *37*
Valenzuelianus *101*
variiformis *29*
variiporus 55, **60**
Venezuelae *101*
Verae-Crucis 73, *73*
Polyporus
verecundus *36*
vernicosus *62*
versicolor *18*
versicutis *33*
vibratilis *76*
villosus *78*
vinosus 85, *85*
virgatus 54, **56**
viticola *4*, 6
volvatus 94, *94*
Wrightii 55, **61**
xalapensis *27*
zonalis *46*
zonatus 16
Polyporus § Cryptoporus *94*
Polystictus
actinobolus *23*
azureus *18*
barbatulus *25*
cascus 77
centralis *127*
cinnamomeus *92*
cirrifer *76*
comatus 77
corrugis 28, 77
cretatus *53*
crocatus *75*
cyclodes *25*
homoporus *75*
cyphelloides *26*
depauperatus *20*
dependens *91*
extensus *75*
Hariotianus *79*
hirtellus *24*
jamaicensis *24*
licnoides *81*
nebularis *19*
nuceus 28
obesus *93*
oniscus *19*
Peckianus *70*
perennis *92*
Persoonii *45*
placentaeformis 28
plumbosus 28
purpureofuscus *81*
pusio *27*
Ravenelii *19*
rigens *75*
rubescens *126*
rufopictus *46*
sanguineus *71*
Schweinitzii *90*
semiplicatus *23*
subglaber *81*
umbonatus *24*
unguicularis *53*
Poria
Fuligo aurantiotingens *14*
inermis *13*
obducens *99*
portoricensis *74*
rufitincta *5*
setigera *90*
umbrinella 12, *13*
Porieae **1**
Porodaedalea 1, 3, **111**

Porodaedalea
Pini **111**
Porodisculus 2, **47**
pendulus **47**
Porodiscus *47*
pendulus *47*
Poronidulus 1, **16**
conchifer **16**
Postia *37*
unulus 297, 318, **319**
Abramsii 321, **338**
acutoconicus 320, **330**
adirondackensis 321, **332**
albogriseus 320, **327**
alcaliniformis 319, 320, **331,** 342
alphitophorus 322, **339**
amabillissimus 320, 321, **324,** 342
argillaceus 322, **341**
atribrunneus 320, **329**
atridiscus 321, **334**
atroalboides 320, **329**
atroumbonatus 321, **335**
aurantiacus 321, **336**
aurantiidiscus 321, **336**
avellaneigriseus 322, **340**
avellaneus 320, **329**
brevipes 320, **328**
caesiialbus 321, **337**
caesius 320, **327**
capillaripes 328, **328,** 342
carbonicola 322, **341**
cervinialbus 320, **326**
cinchonensis 322, **341**
cinereiavellaneus 322, **340**
clavicularis 320, **330**
collybiiformis 321, **335**
connatipes 320, **326**
constans 320, **327**
corrugatus 322, **342**
corticalis 320, **328,** 343
crystallinus 320, **322**
curvipes 320, **329,** 343
cyaneobasis 320, **323,** 343
cymbaliferus 321, **331**
delectabilis 320, **323**
denticulatus 321, **332,** 334
elegantulus 321, **337**
epipterygius 321, **335,** 342
euspeireus 375
farinaceus 320, **326**
flavicitrinus 321, **336**
flavifolius 320, **324**
fuliginosus 321, **335**
fumosiavellaneus 322, **340**
fusipes 321, **337**
galericulatus 321, **336,** 343
gracillipes 322, **340**
Grantii 321, **338**
hemisphaericus 320, **329**
intertextus 320, **328**
latericius 322, **342**
latifolius 320, **327**
Leaianus 321, **333**
lepiotiformis 319, **322**
leptophyllus 320, **325**
leucophaeus 321, **336**
ligniarius 321, **333**
longipes 321, **338**
ludovicianus 320, **330**
Prunulus
luteopallens 320, **325**
magnus 321, **338**
margarita 322, **340**
meliigena 320, **324**
melleidiscus 320, **325**
minutissimus 320, **326**
miratus 320, **327**
murinus 321, **331**
myceliosus 321, **338**
Myrciae 322, **339**
niveipes 321, **332**
occidentalis 321, **337**
ochraceicinereus 321, **333**
odorifer 320, **324**
paludicola 321, **336**
paluster 321, **331**
parvulus 320, **323**
pectinatus 321, **333**
plumbeibrunneus 321, **338**
praelongus 320, **330**
pubescens 322, **341**
pulcherrimus 320, **326,** 342
purpureofuscus 321, **333,** 343
purus 321, 322, **332,** 343, 419
radicatellus 320, **323**
roridulus 322, **339**
roseipallens 320, **324**
roseocandidus 320, **323**
roseolus 320, **324**
rugosoides 321, **334**
rutilantiformis 321, **334**
Sabali 320, **325**
scabripes 320, **331**
semivestipes 321, **334**
splendidipes 320, **330**
strobilinoides 321, **337**
subfumosus 320, **328**
subincarnatus 320, **325**
subpulverulentus 322, **339**
subtenuipes 321, **334**
syringeus 322, **341**
tenerrimus 319, **322**
tenuiculus 321, **334**
testaceus 322, **341**
trojanus 322, **339**
vexans 320, **329**
viridigriseus 322, **340**
vulgaris 320, **326**
Ptychogaster
cubensis 131
Pulveroboletus 133, **156**
Ravenelii **157**
Pycnoporellus 2, **70**
fibrillosus **70**
Pycnoporus 2, **71**
cinnabarinus 1, 71, **71**
sanguineus 71, **71**
Pyropolyporus 3, **101**
Baccharidis 102, **108**
Bakeri 102, **104**
calcitratus 102, **110**
Calkinsii 102, **105**
Cedrelae 102, **105**
conchatus 102, **108**
crustosus *104*
dependens 102, **106**
Earlei 102, **107**
Everhartii 102, **103,** 111

Pyropolyporus
extensus 103, **110**
fulvus 102, **103**
grenadensis 102, **107**
Haematoxyli 103, **111**
igniarius 102, **103**
inflexibilis 102, **104**
jamaicensis 10 , **107**
juniperinus 102, **106**
Langloisii 102, **109**
linteus 102, **109**
praerimosus 102, **105**
pseudosenex 102, **107**
Ribis 102, **108**
Robiniae 102, **105**
Robinsoniae 102, **108**
roseocinereus 102, **104**
sarcitus 102, **110**
sublinteus 103, **110**
subpectinatus 102, **109**
texanus 102, **104**
Underwoodii 102, **106**
yucatanensis 102, **106**
Resupinatus 237, **240**
applicatus 240, **242,** 243
approximans 240, **241,** 243
atrocoeruleus 240, **240,** 243
atropellitus 240, **243**
campanulatus 240, **241**
cubensis 240, **240**
griseus 240, **240**
niger 240, **242**
orizabensis 240, **241**
striatulus 240, **242**
subbarbatulus 240, **241**
subbarbatus 240, **242**
violaceofulvens 240, **241**
Rhipidium *244*
Rhodoporus *134*
felleus *134*
Rigidoporus 2, **45**
contrarius 45, **46**
evolutus 45, **45**
Liebmanni 45, **46**
micromegas *46*, 100
microstomus 45, **45**
substereinus 45, **46**
surinamensis 45, **46**
Romellia *90*
sistotremoides *424*
Rostkovites 133, **153**
granulatus 153, **153**
hirtellus 153, **154**
subaureus 153, **154**
subtomentosus *149*
Russula 166, **201**
abietina 204, **231**
adusta *207*
aeruginea 203, **223**
albella 205, **233**
albida 204, **224**
albidula 203, **216**
alutacea 204, **231**
amoena 235, **236**
anomala 203, 218, **219**
astringens 204, **227**
atropurpurea 202, **212**
atroviolacea 203, **220**
aurantialutea 203, **220**
aurata 235
Ballouii 202, **212**
basifurcata 203, **216**
betulina 204, **227**
bicolor 205, **234**
bifida 203, **215**
Blackfordae 204, **230**
blanda 202, **213**
borealis 203, **220**
brevipes *207*
brunneola 205, **233**
chamaeleontina 204, **231**
citrina 235
compacta 202, **205**
consobrina 203, **217**
corallina 202, **213**
corinthiirubra 203, **220**
cremoricolor 202, **208**
crenulata 205, **235**
crustosa 202, **209**
cutefracta 236
cyanoxantha 203, **217**
decolorans 204, **225**
delica 202, **207**
deliciosa *207*
densifolia 202, **206**
depallens 236
drimeja 221, 236
Earlei 203, **217**
eccentrica 202, **207**
elegans 236
emetica 205, **234**
expallens 203, **221,** 221, 236
fallax 205, **235**
fingibilis 204, **224**
flava 204, **226**
flaviceps 204, **225**
flavida 202, **211**
flocculosa 202, **213**
foetens 203, **214**
foetentula *214*
fragilis *233*
fulvescens 204, **229**
furcata *215*
glauca 203, **222**
gracilis 203, **222**
graminicolor 204, **223**
granulata 203, **214**
grisea *222*
heterophylla 203, **216**
humidicola 204, **230**
incarnata *208*
insignis 202, **212**
integra 204, **228**
rubrotincta *229*
lactea 202, **209**
lepida 202, **208**
lilacea 236
Linnaei 236
lutea 204, **224**
luteobasis 204, **227**
magnifica 202, **205**
Mariae 202, **210,** 236
maxima 204, **229**
melliolens 204, **228**
mexicana 203, **222**
modesta 202, **210**
Morgani 202, **208**
Murrillii 202, **211**
mustelina 202, **208**

Russula
nauseosa 204, **232**
nigrescentipes 204, **226**
nigricans 202, **206**
nigrodisca 205, **235**
nitida 236
obscura 204, **225**
ochracea 236
ochroleuca 203, **218**
ochrophylla 204, **228**
olivacea 236
olivascens *223*
palustris 203, **222**
parvula 205, **235**
paxilloides 203, **218**
pectinata 203, **213,** 236
pectinatoides 203, **214**
polyphylla 202, **207**
puellaris 204, **230**
pulchralis 236
pulverulenta 203, **215**
punctata 236
purpurina 205, **232**
pusilla 204, **229**
Queletii 203, **218,** 221, 236
Raoultii 203, **218**
Robinsoniae 203, **221**
roseipes 204, **227**
rubescens 204, **226**
rubra *218*
rubriochracea 202, **211**
rubrotincta 204, **229**
rugulosa 205, **234**
sanguinea 203, **221**
sericeonitens 205, **233**
serissima 202, **212**
simillima 203, **219**
sordida 202, **206**
sororia 236
sphagnophila 204, **230**
squalida *212*
stricta 204, **224**
subalutacea 204, **227**
subdepallens 204, **226**
subfragilis 205, **233,** 235
subolivascens 203, **223**
subsordida 202, **206**
subusta 202, **207**
subvelutina 202, **210**
sulcatipes 204, **225**
tenuiceps 425
tenuipes 203, **219**
Turci 204, **232**
uncialis 205, **232**
variata 203, **216,** 236
ventricosipes 203, **215**
vesca 236
veternosa 203, **219**
vinacea 203, **217**
vinosa *225*
virescens 202, **209**
viridella 202, **210**
viridipes 236
vitellina 236
xerampelina 202, **208**
Russulina *201*
alutacea *231*
decolorans *225*
grisea *222*
integra *228*
Russulina
lutea *224*
nauseosa *232*
puellaris *230*
Scenidium *83*
Schizophyllus 237, **237**
alneus **237**
communis *237*
Egelingianus *237*
fasciatus *237*
mexicanus *237*
Murrayi *237*
umbrinus *237*
Scorteus *250*
oreades *271*
Scutiger 2, **64**
caeruleoporus 64, **66**
cryptopus 64, **65**
decurrens 64, **65**
Ellisii 64, **64**
griseus 64, **67**
holocyaneus 64, **66**
laeticolor 64, **65**
persicinus 64, **67**
radicatus 64, **66**
retipes 64, **65**
subradicatus 64, **66**
tuberosus 64
Whiteae 64, **67**
Scytinotus 237, **239**
concolor 239, **239**
distantifolius 239, **239**
haematodes 239, **239**
ringens 239
Serda *128*
Sesia *128*
Berkeleyi *130*
hirsuta *130*
pallidofulva *129*
striata *129*
Sistotrema
cinereum 124, *124*
fuscescens 3, *3*
lacteum *15*
spongiosum *37*
symphyton 27
Sphaeria
pocula *47*
Sphaeropus *166*
Spongipellis 1, **37**
borealis 37, **38**
delectans 37, **38**
fissilis 37, **39,** 40
galactinus 37, **39,** 40
hydrophilus 37, **39**
luridescens 37, **39**
occidentalis 37, **38**
spumeus 37
substuppeus 37, **40**
unicolor 37, **37**
Spongiporus 1, **29**
altocedronensis 29, **30**
leucospongia 29, **29**
Stereopodium *319*
Strilia *91*
cinnamomea *91*
Strobilomyces 133, **157**
coccineus 157
strobilaceus **157**
Suillellus 133, **151**

Suillellus
Eastwoodiae 151, **152**
Frostii 151, **152**
luridus 151, **151**
Morrisii 151, **153**
rubinellus 151, **152**
Suillus *133, 154*
bulbosus *142*
castaneus *134*
cyanescens *133*
Tectella 237, **247**
patellaris **247**
Tephrophana *352*
Tinctoporia 1, **14**
aurantiotingens 14, **14**
Tomophagus 1, **30**
colossus **30**
Trametes 1, **42**
aculeifer *79*
ambigua *126*
benzoina *82*
Berkeleyi *126*
bicolor *45*
cinnabarina *71*
cu Tusis 42, **43**
dibapha *77*
elegans *127*
fumoso-avellanea *101*
gausapata *111*
havannensis 42, **44**
hispidula *78*
incana *126*
kansensis *125*
lactea *126*
lignea 42, **44**
limitata *20*
malicola *39*
mexicana 79, 131
nitida *45*
nivosa 42, **42**
obstinata *26*
ocellata *84*
odora *43*
ohiensis 29, *96*
Peckii *79*
Petersii *81*
Pini *111*
Abietis *111*
pura *36*
radiciperda *97*
rigida *75*
robiniophila 42, **42**
sepium *28, 28*
Sequoiae *29*
serialis *29*
stereoides *82*
stuppea *79*
suaveolens 42, **43**
submurina 42, **43**
subnivosa 42, **43**
unicolor *37*
Trichaptum 2, **79**
trichomallum **79**
Tricholoma
cellare 420
rancidulum 419
sienna 420
Trogia 163, **166**
Alni *163*
cinerea **166**
Trogia
crispa *164*
Tubiporus *136*
Turbinellus *167*
Tylopilus 133, **134**
alboater 134, **135**
felleus 134, **134,** 151
gracilis 134, **135**
indecisus 134, **135**
Tyromyces 1, **30**
albogilvus 31, **36**
anceps 31, **35**
Bartholomaei 31, **35**
caesius 31, **34**
Calkinsii 30, **32**
cerifluus 31, **33**
chioneus 31, **35**
crispellus 31, **34**
duracinus 31, **37**
Ellisianus 31, **34**
fulvitinctus 31, **36**
guttulatus 30, **31**
lacteus 31, **36**
leucomallus 31, **36**
nivosellus 30, **32**
obductus 30, **32**
Palmarum 30, **32**
palustris 30, **31**
semipileatus 31, **35**
semisupinus 31, **34**
Smallii 30, **32**
Spraguei 31, **33**
tiliophila 31, **33**
undosus 31, **34**
versicutis 31, **33**
Urospora
subelatina 303
Vaginata 298
plumbea 306, 375
Venenarius 298
Versipellis *136*
chrysenteron *150*
parasitica *141*
subtomentosa *149*
Viscipellis *154*
granulata *153*
lutea *155*
piperata *143*
Xanthochrous *91*
igniarioides 111
tomentosus *93*
Xerocomus *136*
chrysenteron *150*
parasiticus *141*
subtomentosus *149*
Xerotes *165*
Xerotinus 163, **165**
martinicensis 165, **165**
Mauryi 165, **165**
Xerotus *165*, 165
afer *165*
caribaeus *165*
guadelupensis *164*
lateritia *164*
martinicensis *165*
Mauryi *165*
viticola *164*
Xylometron
sanguineum *71*
Xylopilus *113*